THE JOURNAL

OF THE

American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 165, NO. 7 | CHICAGO, ILLINOIS | OCTOBER 19, 1957

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MEDICAL MANAGEMENT OF THROMBOPHLEBITIS AND POSTPHLEBITIC SYNDROME

SURVEY OF FOUR HUNDRED TREATED CASES FROM A SERIES OF SEVEN HUNDRED SEVENTY-NINE CONSECUTIVE CASES OF PHLEBITIS

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The outcome in any case of thrombophlebitis is unpredictable, but fortunately a vast majority of the cases can be controlled with proper management. Even if the phlebitis is localized in a small area, that patient should have maximum therapy because the tendency to develop complications and sequelae exists and further developments of the pathological process are unpredictable. Prompt and thorough treatment in these cases may bring about a more rapid favorable control and lessen the tendency for the condition to spread and recur, and has a definite influence on curtailing the incidence of the postphlebitic syndrome. Hospitalization is recommended for all patients with thrombophlebitis, those with the mild as well as the more severe forms. Subsequent care of phlebitis is an important aspect of the general management in order to avoid recurrences as well as to prevent the postphlebitic syndrome.

THE subject of thrombophlebitis, because of the increasing incidence of this disease, demands consideration from various angles. A recent survey of 2,300 consecutive case records [1] showed 779 cases of phlebitis; in 631 cases, patients had evidence of thrombophlebitis and, in 148, patients were listed as having the postphlebitic syndrome. A further examination of these records indicated that, of the 631 cases of thrombophlebitis, 300 patients had been treated and observed for some time and 100 of the postphlebitic group had likewise received intensive therapy.

An analysis of the effect of the treatment in the 400 cases revealed some interesting and striking data, which indicated that thorough and complete treatment not only produced good results in a high percentage of the cases but also was instrumental in containing the condition and preventing complications and sequelae which may occur in patients with this disease.

Methods of Grading Results

Any method of evaluating the results of therapy must be arbitrary and probably will not be acceptable to everyone. Many tangibles enter into the

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Read before the third Latin-American Congress of Angiology in Havana, November, 1956.

problem and cannot be brushed aside without some consideration. Review of the records revealed patients in whom the thrombophlebitis was completely controlled, but in whom, six months or a year later, an episode of thrombophlebitis occurred in another extremity, or occasionally in the same area as a result of an injury or a systemic infection. This certainly could not be listed as a failure.

However, some method of grading the results must be formulated, even if it is not completely satisfactory, in order to obtain a comprehensive idea whether therapy is beneficial and to what extent it has helped the patient. The following method of scoring was adopted. In the thrombophlebitis group, a good result was recorded if the active thrombophlebitis was controlled, evidenced by the relief of pain and the disappearance of swelling and all signs of inflammation, both local and systemic. An improved grade was recorded if there were evidences of improvement, both subjectively and objectively, but the phlebitis was not completely and satisfactorily controlled. If the phlebitis persisted or extended and involved other areas despite a reasonable course of treatment, the result was listed as a failure.

TABLE 1.—*Etiological Factors, Sex, and Site in Thrombophlebitis and Postphlebitic Syndrome Groups*

	Thrombophlebitis (300 Cases)	Postphlebitic Syndrome (100 Cases)	Total
Etiology			
Trauma	80	29	109
Infection	104	35	139
Postoperative state	16	11	27
Pregnancy	23	12	35
Blood dyscrasia	5	...	5
Malignancy	2	1	3
Indefinite	85	15	100
Site			
Right	115	25	140
Left	132	48	180
Bilateral	53	27	80
Sex			
Male	133	45	178
Female	167	55	222

The postphlebitic syndrome group presented some difficulties in scoring the results of therapy because of the extensiveness of the condition and the vulnerability of the tissues. A good result was recorded if the inflammatory process was contained, with the swelling considerably reduced to a minimal degree, complete subsidence of the dermatitis, relief of pain, and healing of the ulcer (if one was present). If the above qualifications were not complete but therapy indicated that the patient was benefited in many respects, such as healing of an ulcer or other evidences of controlling the underlying pathological changes in the extremity, such cases were listed as improved. Where there was little or no improvement, such cases were reported as failures. The results of therapy in our series will be discussed subsequently.

Etiology

Before taking up the subject of treatment, it may be pertinent to briefly comment upon the various factors which cause thrombophlebitis and enumerate the various sequelae and complications which may develop in an episode of recurring attacks of thrombophlebitis.

It is not necessary to go into details of the etiology of thrombophlebitis.[2] However, the following influences may be mentioned, such as trauma of the intima from various causes; infection, local or systemic; slowing down of the blood flow; and changes in the blood cellular elements, such as the red blood cells (polycythemia) and the platelets increasing in number and adhesiveness. Contributory factors are the postoperative state, pregnancy, puerperium, systemic infections, fractures of long bones (particularly in the aged), blood dyscrasia, malignancy, constitutional liability, and possibly some metabolic factors. The data in table 1 were obtained from an analysis of the 400 treated cases from both groups.

Complications and Sequelae of Thrombophlebitis

The outcome in any case of thrombophlebitis is unpredictable. Fortunately a vast majority of the cases can be controlled with proper management.[3] However, a variety of developments may occur, such as extension of the thrombosis by continuity; involvement of other veins, either in the same extremity or in other extremities, due to some unexexplainable factor; extension of the inflammatory process upward and involvement of the valves; pulmonary infarction; fatal pulmonary embolism; in rare instances, suppuration of the involved vein; perivenous inflammation; involvement of the lymphatics with possible permanent damage to the channels; occasionally, thrombosis of the adjoining artery; and, in exceptional cases, gangrene resulting from involvement of the large venous trunks.

If these episodes occur frequently enough or if the primary episode is a severe one, resulting in damage to the valves and marked perivenous inflammatory reaction, the postphlebitic syndrome may develop. In such cases, the basic clinical picture is one of chronic venous insufficiency with the hazards of recurring episodes of thrombophlebitis, cellulitis and lymphangitis, persistent edema, stasis dermatitis, and ulcers. Needless to say, all of the above-mentioned manifestations need not be present. However, in severe cases, where there have been recurring episodes of thrombophlebitis and perivenous inflammation, the entire clinical picture may ultimately present itself.

Treatment

Therapy should be instituted promptly, and it should be as thorough and complete as possible.[4] This rule should be carried out regardless of the site and extent of the involvement. Even if the phlebitis is localized in a small area, that patient should have maximum therapy because the tendency to develop complications and sequelae exists and further developments of the pathological process are unpredictable. Prompt and thorough treatment in these cases may bring about a more rapid favorable control and lessen the tendency for the condition to spread and recur, and, in our experience, has had a definite influence upon curtailing the incidence of the postphlebitic syndrome. The subject of treatment will be divided into (1) management of thrombophlebitis and subsequent care and (2) treatment of the postphlebitic syndrome with its subsequent care.

Treatment of Thrombophlebitis.—Hospitalization is recommended for all patients with thrombophlebitis, those with the mild as well as the more severe forms. The following regimen is instituted:

1. The patient must rest in bed.
2. Elevation of the injured limb may be accomplished with pillows or, preferably, by raising the foot of the bed 6 to 8 in. with blocks.
3. Paravertebral block with 1% solution of procaine hydrochloride is particularly helpful in cases where there is considerable edema and pain. By this procedure, the pain is relieved and there is a striking subsidence of the edema within 24 to 36 hours. However, a paravertebral block, if it can be arranged, should be done before anticoagulant therapy is instituted. If anticoagulants have already been administered, paravertebral block is inadvisable, because it may result in hemorrhagic extravasation and exacerbation of the thrombophlebitis.
4. Continuous warm wet compresses over the entire extremity have a favorable effect upon the vasospasm, and the patients usually feel more comfortable with them. When possible, a large electric cradle may be helpful in maintaining the continued warmth which is desirable.
5. Anticoagulant therapy has been universally adopted and needs no further elaboration in this presentation. At the onset of the treatment and particularly in severe cases, heparin is recommended. This may be given either in the aqueous solution of 100 mg. twice daily for the first 24 hours or as a repository dose of 300 mg. intramuscularly. At the same time, bishydroxycoumarin (Dicumarol) therapy may be started by giving 300 mg. orally; the daily dosage thereafter is gauged by estimations of prothrombin time. A chart indicating the prothrombin time and the dose of bishydroxycoumarin is kept daily. We have found it useful to employ the following dosage guide, so that the bishydroxycoumarin may be given without requiring the presence of the attending physician: The dose of bishydroxycoumarin is 200 mg. if prothrombin time is 90 to 100 %; 100 mg. if 70 to 89%; 75 mg. if 50 to 69%; 50 mg. if 30 to 49%; and 25 mg. if 20 to 29%. No bishydroxycoumarin is given if prothrombin time is below 20%.
6. Depropanex, an insulin-free extract of the pancreas, is given intramuscularly for vasodilation in doses of 1 to 2 cc. daily. Nylidrin (Arlidin), 6 mg., or tolazoline (Priscoline), 25 to 50 mg., given orally three times a day before meals, is prescribed, and papaverine hydrochloride, 1 grain, (60 mg.), four times a day after meals and at bedtime. Papaverine may be given orally, but, in acute cases, the subcutaneous route is recommended.
7. Salicylates with codeine, ¼ to ½ grain (15 to 30 mg.) every four hours, may be given as an analgesic. If pain is severe, meperidine (Demerol), 25 to 50 mg., is recommended for the patient's comfort.
8. Secobarbital (Seconal) or pentobarbital (Nembutal), 1½ grain (0.1 Gm.), or any of the barbiturates may be prescribed if sedation is necessary.
9. In the presence of fever and evidence of an acute inflammatory condition, antibiotics may be helpful. Although this has been a routine procedure, the results of antibiotic therapy have not been too encouraging.
10. Physical medicine procedures are instituted after the edema has subsided. Methacholine (Mecholyl) chloride, administered by iontophoresis,[5] the immersion or spiral electrode method, is given every other day for a series of 10 treatments. This procedure has been very helpful in overcoming the arteriolar spasm and venous spasm, as well. The oscillating (Sanders) bed is prescribed routinely in these cases for one hour or more daily during the patient's stay in the hospital. The pavex or glass boot is definitely contraindicated in these cases because of the liability of producing an exacerbation of the thrombophlebitis and because it may have a deleterious effect upon the weakened veins. Intermittent venous compression may be used. However, it is not as satisfactory as the oscillating bed. It is contraindicated in the presence of edema.
11. If epidermophytosis is present, the usual measures directed to control this condition are prescribed, i.e., foot soaks with potassium permanganate solution (1:5,000) or application of compound undecylenic acid ointment (Desenex)[6] or carbolfuchsin solution (Castellani's paint).

Subsequent Care: Subsequent care in these cases is very important and too often neglected. After the edema has subsided and the patient is ready for ambulation, elastic support is ordered while he is out of bed. Preferably, an elastic bandage should be employed and should extend from the toes up to midthigh or higher. Later, when all evidence of edema has been controlled, an elastic stocking may be substituted. The elastic support should be continued for at least three to six months or longer, if indicated. The patient is instructed to sleep with the feet elevated.

Anticoagulant therapy should be continued for at least three months, and longer if necessary. Bishydroxycoumarin therapy will be guided by the estimations of prothrombin time. During the patient's stay in the hospital, one can readily ascertain the daily dosage of bishydroxycoumarin necessary to maintain satisfactory prothrombin levels. In ambulatory cases, however, frequent or daily estimations of prothrombin time may not be feasible, and the physician in charge must learn to regulate the dose reasonably well with weekly blood studies. Although prothrombin time levels of 20 to 30% are preferable for optimal therapeutic effect, this need not be insisted upon in ambulatory cases. Levels below 50% may be sufficient. Later, as some definite standard has been reached with the same dosage of bishydroxycoumarin, the estimations of prothrombin time may be done every two weeks. In these cases, as a rule, 50 mg. daily has been found to be a good average dose.

Obviously, the patient is instructed to report any sign of hemorrhagic extravasations in the subcutaneous tissues or hematuria; these are the usual manifestations seen when the prothrombin time drops to extremely low levels. Fortunately, it is not a frequent occurrence and may readily be controlled by discontinuing the bishydroxycoumarin and giving vitamin K therapy, by intramuscular injection, orally, or, in acute cases, intravenously. If the patient has had a profuse hemorrhage, it may be necessary to give transfusions, preferably with fresh blood.

Vasodilators are continued, nylidrin, tolazoline, or nicotinic acid and papaverine, in the usually accepted doses. Periodic treatments with methacholine administered by iontophoresis and with the oscillating bed are continued for a series of 10 treatments once weekly and, later, once every two weeks. Patients are instructed to avoid trauma or too great a demand upon the legs until they have fully recuperated and are able to carry on their regular duties. They are also instructed to give immediate attention to any trivial injuries or colds.

Some patients, who have a tendency for upper respiratory infections which preceded the episodes of phlebitis, are placed on prolonged antibiotic therapy, penicillin, 100,000 to 200,000 units, or sulfonamide compounds, 0.5 mg. daily, as preventive measures. This may not be necessary for the average patient but, when indicated, may be very helpful in preventing recurrences.

Treatment of the Postphlebitic Syndrome.—The management of patients with postphlebitic syndrome is basically similar to the regimen outlined for acute thrombophlebitis, namely, rest in bed; elevation; therapy with anticoagulants, vasodilators, antibiotics, and analgesics; continuous warm wet compresses; and electric cradle. In addition, other measures are employed in an attempt to control the various complicating factors which may be present. There has been considerable interest in the employment of enzymes in inflammatory conditions. Trypsin has proved to be very helpful in such cases.[7] Originally, it was used by the intravenous route, where it could exert a more direct effect upon the involved areas. However, because of the possible toxic effects, this was discontinued. It is generally used intramuscularly. Preparations of trypsin, such as Parenzyme and Chymar, are given in doses of 5 mg. once daily or 2.5 mg. twice daily. Investigations have shown that trypsin has a favorable effect by reversing the inflammatory reactions of tissues. Numerous contributions have proved its value in edema, cellulitis, and particularly in hemorrhagic extravasations in the tissues.

Another preparation, which has been very helpful in our experience, is tetraethylammonium (Etamon) chloride, which is an autonomic blocker.[8] It has been used in patients who have persistent pain and who have ulcers that have not responded to therapy. It may be given intravenously in doses of from 300 to 400 mg. daily. However, the intramuscular route is less apt to cause side-effects. When given in this manner, larger doses may be used, from 500 to 600 mg. daily, divided in two doses, injected in the gluteal region on each side. A series of 5 to 10 injections should be sufficient. It is not advisable to give it indefinitely.

In the presence of cellulitis and lymphangitis, antibiotics of the various spectrums are given by intramuscular injection at the onset of the treatment and, if necessary, may be continued orally, as indicated. If there is a marked dermatitis or cellulitis, nonirritating solutions may be recommended in the form of compresses, with use of a weak boric acid solution or isotonic sodium chloride solution.

If, despite all measures, there is evidence of spreading of the thrombophlebitis or recurrence in other areas and evidence of marked perivenous inflammatory reaction, it may be necessary to resort to foreign protein therapy.[9] Typhoid vaccine is employed. A series of five injections is given, in doses starting with 25 million organisms and gradually increasing to 50, 75, 100, and then 150 million organisms. The sequence of the injections may be given after 24-hour intervals of normal temperature. The details of this procedure can be obtained in textbooks. Foreign protein injections are helpful in patients with recurring infectious thrombophlebitis, and particularly in cases associated with thromboangiitis obliterans or where there is an extension of the pathological process.

For the dermatitis and eczematous dermatitis, soothing lotions are usually prescribed, containing calamine (zinc oxide in an oil base). Strong, irritating solutions should be avoided.

Ulcers are treated routinely in the manner described above with the addition of some local therapy, such as dilute solutions of antibiotics (tyrothricin [Soluthricin], 0.5%, or bacitracin) applied topically. Continuous wet dressings are not encouraged and ointments may only be used as a temporary measure. The electric cradle with a 25-watt bulb may be helpful. Frequent cleansing and removal of dried secretions is beneficial. In persistent chronic ulcers with sloughing, particularly with scab formation, streptokinase-streptodornase (Varidase) may be helpful. This should be employed with an applicator and limited to the involved area only. It is used daily for a limited time, three to five days.

The various physical medicine procedures are very helpful in these cases. When the acute inflammatory condition is under control and the fever has subsided, physical medicine procedures are instituted, such as administration of methacholine by iontophoresis every other day and use of the oscillating bed daily for a series of 10 treatments.

Subsequent Care: A patient with postphlebitic syndrome will usually improve sufficiently to be permitted to ambulate after a period of three to four weeks of therapy. After his discharge from the hospital, he is instructed to wear an elastic support for three to six months while he is up and about. He should be advised to gradually resume his activities and avoid excessive demands upon his venous circulation. He should avoid unnecessary exposure to infection and should give immediate attention to trivial injuries. He is advised to sleep with his limb elevated, either on pillows or by raising the foot of the bed with wood blocks. If there is a history of an upper respiratory infection preceding episodes of recurring thrombophlebitis, the patient is advised to take daily doses of penicillin, with or without sulfonamides, for an indefinite period. He is requested to report to the office for subsequent care, where he is given a series of 10 treatments, once weekly or every two weeks, consisting of administration of methacholine by iontophoresis, use of the oscillating bed, and intramuscular injections of Depropanex. Therapy with vasodilators is continued indefinitely, with either mylidrin or tolazoline and papaverine. Anticoagulants are continued for at least three to six months and, in some cases, patients have been carried along for years, if necessary, on small doses (25 to 50 mg. of bishydroxycoumarin).

The possible role of diet in the management of arterial disorders, particularly atheromatosis, has been conceded. The high incidence of vascular complications occurring in diabetics has been recognized factually. In such cases, carbohydrate and cholesterol metabolism is entailed. However, upon observing the blood uric acid determinations in a number of the phlebitis cases, it was noted that many had what may be termed high normal levels and it was not uncommon to find levels above normal. These findings are being reviewed and will be published subsequently.

Obviously, the condition of patients with phlebitis with a diabetic background must be rigidly controlled with diet and insulin, if necessary. If there is evidence of hypercholesteremia, a low-fat and low-cholesterol diet is recommended. Patients who have high uric acid determinations are placed on a low-purine diet, and colchicine in small doses is prescribed for prolonged periods, if indicated. Low-calorie diets are prescribed routinely in the overweight individuals. Weight reduction in the obese patients is advisable for obvious reasons.

The significance of the above suggestions for diet is further enhanced when we consider that in a number of cases where there is evidence of atheromatous changes in the arteries this may bring about some favorable influence upon the vessel walls. Low-calorie diet with weight reduction helps lessen the demands placed upon the lower extremities, and the low-purine diet may have some beneficial effect in preventing further pathological changes in the vessels. This is speculative, however, because the role of purine metabolism and uric acid metabolism upon the arteries is an entirely new concept which is now being considered in circulatory disturbances.

Table 2.—*Results of Therapy in Thrombophlebitis and Postphlebitic Syndrome Groups and Periods of Observation*

	Thrombophlebitis (300 Cases)		Postphlebitic Syndrome (100 Cases)		Total	
	No.	%	No.	%	No.	%
Results of treatment						
Good	209	69.6	53	53	262	65.5
Improved	82	27.4	35	35	117	28.3
Failures	9	3.0	12	12	21	6.2
Observation period (yr.)						
Less than 1	149		55		204	
1 to 3	84		21		105	
4 to 5	31		18		49	
6 to 10	19		4		23	
More than 10	17		2		19	

Comment

The treatment which has been described in detail is directed to contain the inflammatory process, overcome spasm of the veins as well as the arteries, and improve the circulation, whereby the increased blood flow acts as a deterrent to thrombosis. The subsequent follow-up therapy is aimed at maintaining this improvement for a prolonged time and very likely will keep the incidence of postphlebitic syndrome to a minimum.

The effects of treatment upon these cases were checked (table 2); results were arranged in three grades: good, improved, and failures. The first group included patients who appeared with their first attack of thrombophlebitis or who may have had previous episodes, but in whom the disease did not develop into the permanent clinical picture of the postphlebitic syndrome. Of the 300 cases of thrombophlebitis, results were good in 209 cases (69.6%); improved in 82 (27.4%); and failures in 9 (3%). A total of 291 patients (97%) were benefited in various degrees.

Naturally, the question may be posed as to how long a period the beneficial effects of therapy were maintained. Most of these cases were followed up for various lengths of time. The majority of them were observed for periods up to one year, many up to 5 years, and some up to 10 years or even longer.

The postphlebitic syndrome group showed a smaller percentage of good results, which is to be expected since we are dealing with a chronic type of vein disorder and practically all of these patients had developed the condition before they reported for therapy. However, results were good in 53% of these cases, benefit in various degrees was achieved in 35%, and there were 12% failures.

The combined groups of both thrombophlebitis and postphlebitic syndrome showed good results in 262 cases (65.5%), an improvement in 117 cases (28.3%), and failures in 21 cases (6.2%).

The high percentage of satisfactory results, both the good and the improved cases, may be attributed to various factors. Hospitalization is recommended in all cases whether they are mild or severe, which permits complete and intensive therapy in order to obtain all the objectives, namely, (1) control of the inflammatory process, (2) overcoming the vasospasm, (3) instituting anticoagulant therapy, and (4) carrying out of the various physical measures, particularly administration of methacholine by iontophoresis and use of the oscillating bed.

Subsequent care is a very important aspect of the management if we are to avoid recurrences and if we are to eventually control or prevent the postphlebitic syndrome. Only in exceptional cases has the postphlebitic syndrome developed in those patients who received complete therapy and subsequent care.

Another factor is that, in carrying out the intense and complete therapy, measures are directed to remove any possible etiological factor which may be detected. In the presence of an infection, antibiotics or sulfonamides are prescribed. If there is a metabolic disturbance in the background, this is also corrected; if there is an existing occlusive arterial disorder, this condition is likewise controlled or corrected, if possible, by the above therapy.

Since this presentation is of the medical conservative care of venous inflammatory conditions, we have purposely avoided alluding to the various surgical procedures which have been offered in these cases.[10] Ligation of the large saphenous or femoral veins and stripping have been recommended in many articles. It certainly does not apply to the first episode of an acute thrombophlebitis and it is questionable in our opinion whether it should be the treatment of choice in the postphlebitic syndrome unless definitely indicated. It may be considered in some cases, where varicose veins of long duration are the primary source for the development of the inflammatory episodes, but this is not the usual story in our experience. Various surgical techniques have been offered to correct the postphlebitic syndrome. Bauer [10a] has pointed out the particular value of ligating and resecting the popliteal vein. We have no information from personal experiences with this procedure. However, his reports are of interest and deserve consideration.

In some cases where there is repeated pulmonary infarction, despite therapy, and where there is evidence of involvement of the large deep veins, such as the iliofemorals, ligation of the postcava has been recommended. In selected cases, this procedure may be advisable.

Summary

The problems of controlling inflammatory conditions of the veins deserve serious consideration. The management of thrombophlebitis has developed sufficiently to produce gratifying results. Treatment should be intensive, complete, and followed up. Hospitalization is recommended for all cases, mild as well as the severe or chronic forms. The routine therapy has been outlined and the subsequent care has been emphasized.

Of the 400 treated cases, 300 were classified as primary thrombophlebitis (including some patients who had had previous recurring episodes), and 100 cases were of postphlebitic syndrome. Results of therapy indicated that good results were obtained in 262 cases, improvement in 117 cases, and failure in 21.

Explanations for the gratifying results were (1) intensive and complete treatment, which entailed therapy with anticoagulants and antibiotics and physical medicine, (2) measures to improve the arterial as well as the venous circulation, (3) an effort to remove the causative factor, if detected, (4) improvement of the general health, and (5) prolongation of therapy and sustaining of venous circulation until compensatory measures have been established.

Experience has demonstrated that complete, intensive, and over-all treatment not only contains the pathological disturbance of the veins but also, to a considerable degree, prevents recurrences and lessens the probability of developing postphlebitic syndrome.

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CHRONIC INTOLERABLE PAIN

DISCUSSION OF ITS MECHANISM AND REPORT OF EIGHT CASES TREATED WITH ELECTROSHOCK

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The effectiveness of electroshock therapy in relieving chronic, intractable pain is illustrated in the case histories of eight patients. In five of these, surgical measures for relief of the primary cause of pain were ineffective, and the suffering of the patients was so severe, that some neurosurgical procedure such as lobotomy seemed to be the only alternative to the continued use of narcotics. The use of electroshock is theoretically justified in cases where the pain is probably the accompaniment of activity in certain reverberating circuits in the nervous system. It was justified in the present series by the practical results, since these eight patients, with but one exception, were successfully rehabilitated. Many of the electroshock treatments were given on an outpatient basis. Criteria for the selection of suitable cases remain to be defined, but it is clear that some patients can be saved by this means from the necessity of choosing between neurosurgery and drug addiction.

Of the problems presented to the clinical neurologist, the evaluation and treatment of chronic pain syndromes is one of the most frequent and often the most difficult. This is in large part due to the variations in subjective response to pain and to the incomplete understanding there is regarding the underlying physiological and psychological mechanisms concerning pain.

While there has been a great deal published concerning pain and pain mechanisms, it is my experience that so far as treatment is concerned there is not much material available that will help the clinician in the management of a particular case unless it fits into the category of conditions in which neurosurgical intervention is beneficial, such as trigeminal neuralgia, causalgia, and intractable pain due to irreversible organic states, which may often be relieved by chordotomy or frontal lobotomy. Too often patients with intractable pain of indefinite cause are considered, sometimes in desperation, for lobotomy before other types of treatment have been adequately tried.

The neurophysiological work of Lorente de Nó[1] demonstrated that there was a neuronal pool interposed between the sensory and motor components of the spinal cord. This supplied a means by which temporal and spatial dispersion of input could take place, and the number of neurons making up the pool permits great variety in dispersion patterns from simple to complex. From his theory of a closed self-reexciting chain within this pool came the concept of self-sustaining pain patterns, or internuncial pool, as exemplified in causalgia. It has been further demonstrated that influences from other parts of the nervous system can alter the motor responses to a sensory stimulus, and studies of the reticular

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Chairman's address, read before the Section on Nervous and Mental Diseases at the 106th Annual Meeting of the American Medical Association, New York, June 5, 1957.

formation in the brain stem and spinal cord[2] demonstrate that it plays an important part in modifying activity within the internuncial pool.

It may, therefore, be postulated that in certain individuals recurring painful stimuli from the periphery set up reverberating circuits related to the central activating system which influence, and are in turn influenced by, the cerebral cortex so that there may develop a syndrome of chronic pain which is frequently incapacitating and often results in the excessive use of pain-relieving drugs. As in causalgia, the additional trauma of a surgical procedure upon the part affected only serves to increase the incoming stimuli and to reinforce the abnormal physiological process producing the sensation of pain. In line with this concept it seems likely and appears to have been demonstrated clinically that the various emotional reactions related to this state, namely, preoccupation with symptoms, introspection concerning among other things the memories of the pain and anticipation of the future, depression, and anxiety, as well as emotional stress brought on by other conflicts, also serve to reinforce the reverberating circuits and further perpetuate the disability.

Only a small percentage of individuals suffering from a painful disorder develop chronic intolerable pain. It is my conception that this is due largely to the emotional reaction of the individuals concerned. This is exemplified by the studies of Beecher[3] on the variable effects of placebos, which illustrate the strong influence of suggestion on the response of the individual to medication, and by studies on the group of individuals described as congenitally indifferent to pain.[4] In the latter group, pain is perceived normally but there is no apparent emotional reaction to it so that the painful stimuli are never unbearable. It seems likely that in these individuals, for some as yet unexplained reason, the cortical elements related to the reverberating circuits do not manifest any influence, so that chronic pain syndromes do not develop.

In view of this, one might postulate that chronic pain syndromes, i. e., sustained pain after the disappearance of the original impetus, cannot develop unless cortical components are involved. Thus I would add one more reciprocating factor to the three cited by Livingston,[5] who states, "If I were to translate this clinical interpretation into physiologic terms I would say that there were three reciprocating factors in the vicious cycle of the causalgic state: incoming impulses from the periphery; the internuncial pool activity; and the motor impulses from the lateral and anterior horn cells that are brought within the influence of the pool." It might be further postulated that the individual's response to treatment to the peripheral nerves, such as injections of procaine (Novocain) hydrochloride or sympathectomy, or to drug therapy or psychotherapy would depend in part on the nature and degree of cortical involvement in the reverberating circuits. The fact that in some instances it appears that the emotional disturbance preceded the development of the chronic pain syndrome and in others it seemed to stem from it is explained by this concept. It is, therefore, this uncertainty in evaluating the influence of pain on emotion or vice versa that makes these patients such difficult therapeutic problems.

A series of illustrative cases is presented. It should be emphasized that all these individuals were referred to me, usually after medical and surgical treatment had been ineffective over a prolonged period of time.

Report of Cases

CASE 1.—A 47-year-old married woman had, seven years before hospital admission, suddenly developed epigastric pain with nausea and vomiting. This was relieved by a hypodermic injection of meperidine (Demerol) hydrochloride. Subsequently she had such attacks every three to six months until early in 1955, when they occurred every other night until she had a partial gastrectomy for duodenal ulcer on June 29, 1955. After surgery she was free of pain for five days; then she began to have pain daily. She described the pain as horrible. It was accompanied by marked hyperperistalsis and was relieved at first by one or two hypodermic injections of meperidine. Later the drug relieved the pain for a few hours only.

The case history revealed no evidence of any previous illness, and there was no evidence of emotional stress or instability. The patient had seen a number of physicians and had been thoroughly studied medically. When I first saw her, on Aug. 15, 1955, she was in a knee-chest position, crying with pain and pleading for meperidine. She was cooperative but agitated and depressed. No abnormal physical or neurological findings were noted. She had lost considerable weight.

Sanatorium care and electroshock therapy were recommended, but the husband was advised against this by medical friends. The patient was transferred to another hospital, where, after a medical checkup, she was referred to the psychiatric department. Psychotherapy was advised, but the patient was so ill she could not get to the doctor's office. She gradually became worse, and finally, on Sept. 22, 1955, she was admitted to a sanatorium for electroshock therapy. She improved rapidly and was discharged at her husband's insistence on Nov. 19, 1955, but was readmitted on Nov. 25 because of a recurrence of symptoms. She was subsequently discharged and readmitted twice. Her final discharge was July 28, 1956, since which time she has remained well. She had a total of 42 treatments.

This case illustrates development of chronic pain due to duodenal ulcer, increase of pain after gastric resection, and relief from pain with sanatorium care and electroshock therapy.

CASE 2.—A 45-year-old woman was first seen on Jan. 8, 1954, because of abdominal pain, vomiting, malnutrition, and depression. She had been well until six years before when she had developed severe abdominal pain attributed to gallstones, which had been present for some time. Abdominal pain and vomiting persisted, and in December, 1951, she was given a diagnosis of inoperable carcinoma of the stomach. In January, 1953, gallbladder surgery was required, and exploration revealed an apparently normal stomach. However, she continued to have abdominal pain and vomiting and weighed only 84 lb. (38.1 kg.) when I first examined her. At that time she complained of constant abdominal pain with spasms "just where the gallbladder was." She was unable to retain food, felt quite depressed, and was taking a considerable amount of meperidine for relief. The depression had apparently become evident when her youngest son had died two years before. The husband drank to excess and when intoxicated abused her. Examination revealed only evidence of marked loss of weight.

She was admitted to a sanatorium Jan. 16, 1954, where 12 electroshock treatments were administered. She improved and was discharged Feb. 18, at her insistence. She did not maintain her improvement at home. Abdominal pain and vomiting recurred. She was returned to a sanatorium on July 15, 1954, and given 17 more electroshock treatments. She improved markedly and was discharged on Sept. 16. She subsequently remained quite well and resumed many of her social activities and family responsibilities. She ate well and had no nausea, vomiting, or abdominal pain.

Late in 1955, after being under considerable emotional strain, she began to have abdominal distress similar to that she had had before. Sanatorium care was advised and refused. Subsequently outpatient electroshock therapy was given. She had 16 treatments, two to five days apart, with some improvement at first; then, however, her abdominal distress increased. She would not consider entering a hospital for study. Finally, on April 10, 1956, she became delirious, and she died shortly after entering the sanatorium. The autopsy showed acute bacterial nephritis with formation of multiple abscesses and a large chronic benign gastric ulcer.

This case illustrates the development of chronic abdominal pain as a result of the combination of intra-abdominal pathology and emotional stress. While the patient was quite depressed when first seen by me, it appeared that the abdominal distress had been present long before she had become depressed but had not been constant or incapacitating until she had become disturbed emotionally. There was marked improvement with sanatorium care and electroshock therapy.

Case 3.—A 55-year-old woman was examined on March 8, 1956, because of terrific thumping pain in the back of the neck and head, associated with vomiting which had been troubling her for three years. She had flashes of light before her eyes and loss of equilibrium, but no dizziness. She had lost consciousness with the first and several subsequent attacks. Her blood pressure had been markedly elevated each time she had had a headache, which usually lasted from a few days to several weeks. She was hospitalized "25" times in three years because of these complaints and had had "every kind" of medicament, even narcotics, without relief.

The case history revealed that the patient had been happily married for 36 years. She had had "migraine" for 10 years, but this had subsided 5 years before hospital admission. There had been eight major operations, none recently. When the patient had been 28 years of age she had had a hysterectomy, followed by nervousness and depression, which had been diagnosed as premature menopause.

No neurological abnormalities were noted. The patient was alert and cooperative and did not appear to be depressed even when she discussed her difficulties. It was at first felt that she might have migraine or a convulsive disorder with a psychoneurotic reaction. The electroencephalogram was negative. The patient did not improve, and, finally, after several conferences with her internist, electroshock therapy was instituted.

On admission to a sanatorium on March 12, 1956, she complained constantly of severe headache, until after the fourth electroshock treatment. She continued to improve and was discharged on April 13, 1956, having had 10 electroshock treatments. She got along well for about two months; then her headaches recurred, and she was readmitted June 5 and discharged, free of symptoms, July 21, having had 12 more electroshock treatments. Since then she has remained well.

This case illustrates the development without apparent cause of chronic head pain in a psychoneurotic individual. One might presume the patient's symptoms were the product of an emotional depression, though she did not appear to be particularly depressed. While the prognosis of the condition seemed unfavorable when the patient was first seen, she did very well with electroshock treatment and supportive psychotherapy.

Case 4.—A 48-year-old woman was admitted to the sanatorium on July 17, 1956, in a severely malnourished and depressed condition. The case history revealed that she had always been somewhat emotional and had had "migraine" headaches for years, which had been increasingly severe in recent years. They had been associated with nausea and vomiting, and in the past year there had been considerable weight loss and emotional depression. There had been several suicidal attempts during that period, and the headache had been constant. The patient was very thin and disturbed and complained constantly of headache, abdominal pain, and nausea. She received 12 electroshock treatments and was discharged Aug. 24, much improved. When last seen Oct. 18 she was quite well, had had no more headaches, and was making plans to return to work.

This case illustrates the development of chronic pain in a somewhat unstable individual with migraine which apparently set the pattern for her pain reaction.

Case 5.—A 58-year-old woman was seen May 26, 1955. She had had hemiplegia on the right in 1951, after which she had had some pain in her right arm which had become increasingly more severe and constant for eight months. In the two months before her admission to the hospital the pain had been intolerable, and when anyone touched the arm it hurt terribly and pain radiated through the hand and up the arm. She had become restless, tense, and somewhat depressed in the preceding four months. She had been subjected to considerable emotional stress since her stroke. She had had a few electroshock treatments in Paris three years before hospital admission because of a depressive reaction and had felt somewhat depressed for a year preceding admission. Her blood pressure was 190/100 mm. Hg. There was a residual hemiparesis on the right with hyperalgesia and hyperpathia on the right, especially in the upper extremity. Mentally she was quite restless, tense, and depressed.

She received eight electroshock treatments and was confined to a sanatorium from May 28 to June 21, 1955. She was greatly improved until April, 1956, when her arm began to ache more and insomnia developed. She was planning to go to Europe and was concerned about the problems she would have to face there. She appeared to be somewhat indecisive and depressed. She was given three outpatient electroshock treatments in April, 1956, and has remained quite well since.

This case illustrates the development of intolerance of chronic thalamic pain with increased emotional stress and depression, with relief with electroshock treatment.

Case 6.—A 62-year-old woman consulted me Dec. 22, 1954, complaining of pain in her legs ever since an accident eight years before in which she had fractured both legs. Her husband had been killed in the accident, which upset the patient considerably. She was troubled so much by pain that the left kneecap had been fused in 1952. The pain was worse after the operation. The patient was unable to give a clear history of her pain. Apparently it was relieved by rest in bed, but when she went to bed at night it took her several hours to settle down and get to sleep. On awakening in the morning she felt free of pain, but after she got up and moved around the pain returned. She felt that the pain made her nervous and that the nervousness aggravated the pain. At times she became quite depressed, and her son stated they could not get her interested in anything outside her complaints. Early in her illness she had used alcohol for relief and at one time was drinking excessively. She stopped drinking after she fell and bumped her head.

Examination revealed no physical or neurological abnormalities except for a stiff knee joint on the left. She was somewhat depressed and at times had suicidal ideas. Symptomatic treatment gave no significant relief. Therefore, on July 12, 1955, outpatient electroshock treatment was started. This was given as needed for symptomatic relief, the patient having immediately responded favorably. On Oct. 22, after the 11th electroshock treatment, she was apparently free of leg pain. She was, however, quite tense and had considerable gastrointestinal distress. Because of this she was admitted to a sanatorium on Nov. 1, and her condition improved. Mild pain in the legs recurred, and she was given one more electroshock treatment. Subsequently she felt quite well and was discharged on Nov. 15, free of complaints.

She got along well until November, 1956, when, with onset of cold weather, her legs again began to ache and she felt some generalized fatigue and malaise. This persisted, and she was given an outpatient electroshock treatment on Jan. 14, 1957.

This case illustrates the development of chronic leg pain after injury. There was an associated emotional depression due to the death of the patient's husband in the same accident. Pain was increased by surgery performed for relief and was associated with increase in depression. After shock treatment the patient still had some pain on occasion but was able to tolerate it more satisfactorily. She, however, never improved to the point where she did not require sedation, especially when pain was troublesome.

Case 7.—A 46-year-old woman lacerated her left index finger on Sept. 27, 1955. The wound was repaired, but she developed considerable swelling of the finger. This swelling was mistakenly attributed to a bone infection. After a month, because of severe pain and swelling, she consulted another doctor who treated her for six weeks without benefit. The finger was then reexplored for a piece of glass. None was found, but a cut tendon not previously diagnosed was repaired. Subsequently the pain persisted, though the swelling subsided, and the patient developed the typical picture of causalgia, with redness and coldness of the finger, wasting and weakness of muscles of the hand, and pain which at times radiated up to the shoulder.

A stellate block gave considerable relief in March, 1956, so a left upper thoracic sympathectomy was done. Some relief of pain in the finger was obtained. However, the patient proved to be quite nervous postoperatively, was easily upset by hospital personnel, and at times was emotionally disturbed. She was discharged at her insistence. There was some improvement in circulation in the left hand, and the patient maintained some reduction of pain in the finger but complained bitterly of chest pain in the distribution of the second and third thoracic segments. This continued, and when she consulted me April 28, 1956, she was suffering a great deal of pain in the left arm and left part of the thorax. She was taking considerable medication, including codeine, and would take so much if unsupervised that her husband could no longer leave her home alone.

After admission to a sanatorium she wept a great deal and was depressed and complained constantly of pain, demanding something for relief. She was disturbed at night. At times she refused to wear the hospital gown on her left arm because it was so painful. She remained in bed constantly. She was given three electroshock treatments weekly for four weeks. At the time of discharge on May 29, 1956, she occasionally complained of moderate pain in the left shoulder, which was relieved by Bufferin (acetylsalicylic acid buffered with aluminum glycinate and magnesium carbonate). Otherwise she felt well and had been sleeping well.

She was brought to see me on July 7, 1956, by her husband, who stated that the patient had done well for several weeks after discharge and then, because of increasing pain, had consulted her family physician, who, instead of advising her to return, had given her the same medicament she had previously taken to excess. She was again complaining of constant pain in the left upper extremity and the left part of the chest and was somewhat agitated and depressed. She was given five outpatient electroshock treatments in July, after which she made a complete recovery. When last seen she was cheerful, optimistic, and was not concerned about a little distress over the left part of the thorax.

This case illustrates the development of chronic causalgic pain after an injury, pain increased by surgery and associated with considerable emotional disturbance and depression. After electroshock treatment there was still some discomfort in the patient's chest, but she tolerated this satisfactorily.

Case 8.—A 59-year-old man was referred to a neurology clinic Sept. 24, 1956, because of the complaint of persistent pain in an operative scar for hiatal hernia, which circled his chest on the left. The patient had had abdominal pain and vomiting for five years before May, 1955, when he underwent repair of a hiatal hernia, gastrectomy, and pyloroplasty. As a consequence of pain in his chest, he had an intercostal nerve block in January, 1956, excision of the sixth and seventh costal cartilages on the left in February, 1956, and neurectomy of the sixth and seventh thoracic sensory roots on the left with neurotripsy of the eighth thoracic root in April, 1956, all without benefit. In July, 1956, he shot himself in the left side of the chest, having become increasingly depressed because of the pain and his difficulty in obtaining satisfactory work. He recovered promptly from the gunshot wound but continued to complain of pain in the chest and required considerable medication for relief.

When the patient was seen by me, he did not appear to be seriously depressed. It was felt that the pain was probably largely psychogenic in nature and that before any further neurosurgical procedure was done he should be given procaine hydrochloride intravenously and, if this was not beneficial, electroshock therapy. The procaine gave no relief, so electroshock treatment was instituted. After eight treatments the patient felt much better and no longer required drugs for relief of pain. Improvement was maintained, and he was discharged in February, 1957. He still had some pain in the scar, but it no longer troubled him.

This case illustrates the development of chronic pain after surgery for relief of a condition causing intermittent pain. Subsequent surgery for relief of pain was ineffective, and suicide was attempted. The patient did not appear to be severely depressed and after two months of inpatient psychiatric treatment was referred to the neurology clinic for consideration of further treatment, possibly surgical. After electroshock therapy, he had some discomfort in the scar but it no longer bothered him.

Comment

The cases cited were chosen to illustrate some of the difficulties facing the clinician when he is confronted by a patient with chronic pain.[6] Often the patient has seen a number of physicians before and has had repeated examinations and many times surgery in the physician's attempt to diagnose or treat the condition. Too often the patient has become dependent on drugs, which further complicate the problem. While all the patients cited above received electroshock treatment, it should be emphasized that it is not my contention that this is the treatment of choice in such cases but that this represents an approach which can give good results in problem cases and that it should be considered at least before any neurosurgical procedure, such as frontal lobotomy or chordotomy is done. Under certain circumstances, especially where prolonged institutional care under psychiatric supervision is possible, satisfactory results can be obtained in some instances by psychotherapy.[7]

The explanation for the favorable results after electroshock treatment in the cases cited above is not yet entirely clear. According to the concept presented in this paper, chronic intolerable pain, regardless of specific cause, depends on reverberating circuits that are perpetuated by stimuli coming from the periphery, the cortex, or both. Electroshock therapy may produce its effect either by relief from the emotional depression, with resultant reduction in morbid preoccupation and anxiety, or from a reduction in the influence of the cortex on the reverberating circuits, or both, because of some modification in activity of the neuronal systems involved. It would seem that the same effect could be obtained, though more slowly, by psychotherapy and institutional care. The use of electroshock therapy in my opinion is more desirable in severe cases because of the rapidity with which both physical and emotional improvement can be obtained.

The criteria for selection of patients for this therapeutic approach are not well defined. Since cortical influences seem so significant in patients with chronic intolerable pain, it would appear that the prognosis is best for the condition of patients who are basically emotionally sound and developed their illness as a result of a painful experience or a series of painful experiences, in combination with emotional stress not necessarily related to the individual's illness. This would seem to be true especially where depressive elements are prominent and where the emotional conflicts may be resolved. It is my impression, however, that any patient with chronic intolerable pain not due primarily to some progressive disease such as carcinoma should be given a trial on electroshock treatment before frontal lobotomy is considered, particularly if measures to relieve the peripheral stimuli have been ineffective.

The use of electroshock therapy in the type of case cited here is not without difficulty. The period of treatment is often prolonged and several courses of electroshock treatment always combined with drug therapy and supportive psychotherapy may be necessary. The patient, the family, and the referring doctor usually have the concept that electroshock therapy is for the insane and resent its recommendation. Unless a complete understanding of the total situation can be obtained, the program is not advisable. Pentobarbital given orally one to two hours before treatment, with amobarbital sodium given intravenously in sufficient dosage to produce light sleep just before treatment, does much to allay the anxiety related to the procedure.

Summary

In five of eight cases of chronic intractable pain which had been unresponsive to medical or surgical treatment, surgical measures for relief of primary cause of pain were ineffective and generally seemed to make the condition worse. It is believed that chronic pain is the product of reverberating circuits in the nervous system, of which the cortical components are of great importance. Electroshock therapy gave marked benefit or relief from pain in all cases reported. Thus, this represents one approach to the treatment of chronic pain which should be tried in many instances before such patients are subjected to some neurosurgical procedure, particularly lobotomy, for relief of pain or abandoned to drug addiction.

2010 Wilshire Blvd. (57).

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J.A.M.A., Oct. 19, 1957

A PRESSOR PHENOMENON ASSOCIATED WITH THE POSTPARTUM PERIOD

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Of 23,600 patients who delivered during the past four years, 2,311 patients had to be followed in a toxemia clinic. Serial studies on these patients revealed that 464 (20%) showed the highest level of arterial pressure during the 3-to-17-week postpartum period. In 133 of these patients this respresented the first appearance of hypertension. Their history, pregnancy, delivery, and immediate postpartum period were entirely normal. In 331 patients there was a history of prior hypertension. It would seem from these studies that a previously unrecognized pressor phenomenon, practically confined to multiparas, was active during the postpartum period. Since the condition is self-limited, therapy by drugs, restriction of activity, or diet is not indicated. The possibility of a relationship to a vascular disease later in life remains to be studied.

Previous publications from this clinic have been concerned with pyelonephritis and hypertensive vascular disease masquerading as toxemia of pregnancy and the frequency of hypertensive disease in the young pregnant female.[1] More recently our interest has centered around a group of asymptomatic patients with an entirely normal history, pregnancy, delivery, and immediate postpartum course, with the first occurrence of an elevated blood pressure reading occurring two to seven weeks post partum. Although the syndrome of postpartum hypertension has been recognized by Stout,[2] Meyer and Nadler,[3] and Dieckmann [4] as not uncommon, its frequency has not been appreciated by obstetricians or internists.

The frequent finding of the highest level of arterial pressure in patients with chronic hypertension (history of hypertension prior to pregnancy) occurring during the period from 2 to 20 weeks post partum stimulated our interest further and suggested the possibility that some type of pressor mechanism might be operative then. Many questions have arisen. What types of patients develop postpartum hypertension? Is there a relationship between parity and age and the development of hypertension? What factors initiate the pressor phase? What causes its termination? Are there any clues to the underlying pathogenesis? Is there a relationship between postpartum hypertension and the development of chronic hypertensive vascular disease?

During the past four years there have been 23,600 deliveries at the District of Columbia General Hospital (fig. 1). Less than one-half of these patients returned to the postpartum clinic. Of these 10,002 patients, 7,691 were entirely normal (showing no evidence of cardiovascular-renal disease) and were immediately discharged by the obstetricians. The remaining 2,311 of these patients showed vidence or history of an elevated blood pressure, ema, or albuminuria and were referred to the oxemia clinic. Four hundred sixty-four patients showed the highest level of arterial pressure during the postpartum period. One hundred thirty-three of these patients were given a diagnosis of postpartum hypertension, and 331 were patients with a history of hypertension prior to pregnancy. An analysis of these two groups of patients is the subject of the present report.

Methods and Materials

Patients were not included in this study if complete antenatal and hospital records were not available. Any history of hypertension or renal disease prior to pregnancy, or any cardiovascular-renal abnormality during pregnancy or delivery (even a trace of edema or albuminuria), or any abnormal physical finding in addition to the elevated blood pressure reading excluded the diagnosis of postpartum hypertension. The patients with chronic hypertensive vascular disease were also followed in the toxemia clinic during their antenatal course.

Besides the usual obstetric examination, a complete cardiovascular examination was performed in both groups, including careful ophthalmoscopic examination and urinalysis. During the postpartum period the patients were examined at two-week intervals until the blood pressure had returned to its usual level. Ten patients who were given a diagnosis of postpartum hypertension were hospitalized to determine the result of 72 hours of bed rest on the arterial pressure. An electrocardiogram, x-ray of the chest, and urine culture were performed on each. After the period of bed rest, the responses of the arterial pressure to 5 mg. of phentolamine

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Read in part before the national meeting of the American Federation for Clinical Research, Atlantic City, N. J., May, 1957.

methanesulfonate given intravenously, to 0.05 mg. of histamine base given intravenously, and to the head-up tilt position were tested.

Results

Group with Postpartum Hypertension.—One hundred thirty-three patients had postpartum hypertension; they represented 1% of the 10,002 patients who returned to the postpartum clinic during the past four years and 6% of the 2,311 patients followed in the toxemia clinic. Their average age was 28 years (14 to 44). Multiparity predominated; the average number of children was 5 (1 to 14). The average time for the first appearance of the hypertension was three weeks (two to six weeks). The highest level of arterial pressure was most frequently recorded at 6 weeks (5 to 8 weeks); and the average duration of the postpartum hypertension period was 17 weeks (6 to 11 months). The mean arterial pressure rose from an average of 92 ± 10 mm. Hg to 127 ± 13 mm. Hg, a 38% average increase.

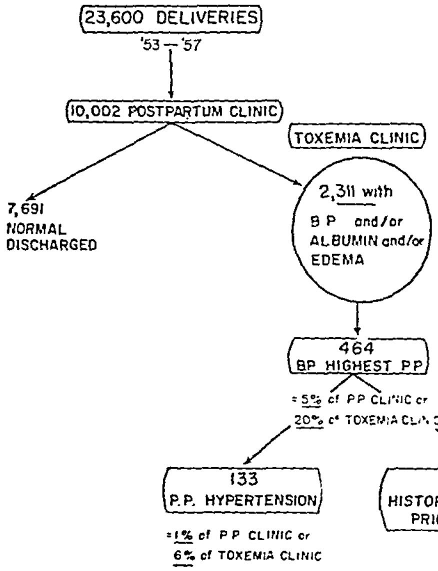
23,600 DELIVERIES
'53 – '57
10,002 POSTPARTUM CLINIC
TOXEMIA CLINIC
7,691 NORMAL DISCHARGED
2,311 with B P and/or ALBUMIN and/or EDEMA
464 BP HIGHEST PP
= 5% of P P CLINIC or 20% of TOXEMIA CLINIC
133 P.P. HYPERTENSION
331 HISTORY OF HYPERTENSION PRIOR TO PREGNANCY
= 1% of P P CLINIC or 6% of TOXEMIA CLINIC

Fig. 1.—Distribution of patients with postpartum hypertension at District of Columbia General Hospital.

In the patients hospitalized, 72 hours of bed rest was associated with a 13% average reduction in arterial pressure (127 ± 13 mm. Hg to 110 ± 9 mm. Hg). There was no abnormality in the electrocardiogram or chest x-ray of any patient. Similarly, the blood pressure response to phentolamine, histamine, and tilting was not abnormal.

Group with Chronic Hypertension.—In the past four years, 1,130 patients with a history of hypertension prior to pregnancy have been followed in the toxemia clinic. Three hundred thirty-one, or 29%, of these patients have consistently shown the highest level of arterial pressure during this period from 2 to 17 weeks post partum. Their average age was 29 (13 to 43). Again multiparity predominated, with an average of 5 children per patient (1 to 14). The average time of the first appearance of an elevated arterial pressure above the usual hypertensive level was 3 weeks post partum (4 to 10 weeks); and the average duration of this hypertensive state was 9 weeks (15 to 28 weeks). The mean arterial pressure increased from an average of 124 ± 17 mm. Hg during pregnancy to 142 ± 17 mm. Hg, a 15% average increase.

Comment

Although the syndrome of postpartum hypertension is rare, occurring in 1% of normal postpartum patients, it would seem that the presence of a pressor phenomenon during the postpartum period is rather common (fig. 1). In addition to the 133 patients with postpartum hypertension, there were 331 patients with a history of hypertension prior to pregnancy who showed the highest level of arterial pressure during the postpartum period. This total of 464 patients represents 5% of the total postpartum population or 20% of the toxemia clinic. In other words, 20% of the patients who exhibited any pressor phenomenon in relation to pregnancy showed the highest level of arterial pressure during the postpartum period.

Further evidence for the existence of a pressor phenomenon during the postpartum period can be gained from serial studies on 30 patients followed through three pregnancies (fig. 2). The only elevations of arterial pressure in these patients occurred during the postpartum period. Four of this latter group are now being treated in the hypertensive clinic for persistent hypertension. In these four patients, it would seem that postpartum hypertension was the forerunner of hypertensive vascular disease. Whether long-term follow-up studies on the other patients will show that hypertensive vascular disease is a common outcome of postpartum hypertension is not known.

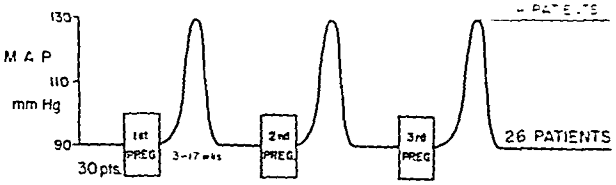

Fig. 2.—Studies of 30 patients followed through three pregnancies.

The cause of the pressor phenomenon in both of these groups is unknown. Preliminary pressor and depressor studies have not given a clue as to the underlying etiology in the postpartum hypertensive group. It does not seem to be due solely to anxiety, nor does it seem to represent merely a labile blood pressure in a tense patient, since the arterial pressure in these patients was not significantly elevated during labor or delivery, usual times of stress and anxiety. The lack of a drastic reduction in blood pressure after bed rest would also tend to minimize anxiety as playing an important role in the production of this type of hypertension. Since these patients have not been completely evaluated psychoanalytically, the role of subconscious anxiety and frustration in the pathogenesis in this syndrome cannot be completely evaluated.

Whether there is a relationship to multiparity is uncertain, although it would seem from our studies and from the studies of others [5] that this transitory postpartum hypertension is seen almost exclusively in multiparous women. Our data are also in agreement with those of Stout [2] and Meyer and Nadler,[3] who found postpartum hypertension in an older obstetric age group. Although the average age of the patients with postpartum hypertension reported here is only 29, the average age of our clinic population taken as a whole is 24. This latter observation would seem to be in keeping with the earlier appearance of hypertensive disease in Negro women as reported by Schulze and Schwab [6] and one of us.[1b]

In order that the natural course of the disease might be studied, patients with postpartum hypertension purposely have not been given any type of therapy. Whether therapy might shorten the duration of the hypertensive period or prevent the development of persistent hypertension (if this is found to follow) is unknown. Since these patients are asymptomatic and without evidence of vascular disease except for an elevated arterial pressure, the only logical reason for treatment would be prevention of permanent hypertension. Studies are now in progress to determine to what type of hypotensive treatment these patients are most sensitive.

Since this is a self-limited state, one would have great difficulty in evaluating the effectiveness of any type of therapy since a fall in arterial pressure to normotensive levels might simply represent the self-termination of the hypertensive state. Until such studies can prove either shortening of the hypertensive period or actual prevention of permanent hypertension, no definitive hypotensive therapy or restriction of activity or diet would seem to be indicated.

Summary

The syndrome of postpartum hypertension, that is, an asymptomatic elevation of arterial pressure 2 to 17 weeks post partum in a patient with normal history, and normal pregnancy, delivery, and immediate postpartum period, is rare, occurring in 1% of normal postpartum patients or 6% of our toxemia clinic population. The pressor phenomenon associated with the postpartum period is rather common, however, since, in addition to the patients with postpartum hypertension, 331 patients with a history of hypertension prior to pregnancy, or a total of 20% of our toxemia clinic population, showed the the highest level of arterial pressure during the postpartum period.

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This investigation was supported by research grants from the American Heart Association; the Washington Heart Association; the National Heart Institute, National Institutes of Health; Irwin, Neisler & Company; Ciba Pharmaceuticals, Inc.; and Charles Pfizer & Company, Inc.

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Drug Evaluation.—There is no substitute for adequate clinical pharmacology plus a sound knowledge of the characteristics of the drug under test. When this has been done, then, and only then, can we approach an evaluation of the psychogenic responses unrelated to the specific drug effect as compared to the specific drug response. It is becoming increasingly difficult to separate nonspecific psychosomatic drug responses from specific drug effects in the evaluation of drugs that affect the central nervous system, particularly those used for treating psychiatric conditions. Under these circumstances, specific responses to drugs fade progressively into nonspecific psychological effects. The evaluation of this grey zone presents difficulties, chiefly because of the lack of objective tests for evaluating drugs in mental and emotional disturbances. When the use of subjective criteria is essential, placebo substitution is a requirement for evaluating therapeutic agents. If the range between maximum therapeutic effect and intolerable side-reactions is sufficiently wide, double-blind procedures may be the method of choice for evaluating therapeutic efficacy of drugs used for specific disease entities.—J. H. Moyer, The Psychosomatic Problem in Drug Evaluation, *A. M. A. Archives of Internal Medicine,* November, 1956.

OPEN HEART SURGERY

ANESTHESIA AND SURGICAL EXPERIENCES

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Open heart surgery under direct vision is now performed by using either hypothermia or extracorporeal circulation. The latter method, in which circulation is completely diverted from heart and lungs by using a pump-oxygenator, was used in 53 operations. Thirty of these were for the correction of aortic stenosis, and extracorporeal bypass times up to 85 minutes were found to be compatible with survival. Details of anesthesia, surgical procedure, and record-keeping are given. The tetralogy of Fallot was corrected in four patients, with zero mortality. Eight of the 14 deaths in other cases resulted from ventricular fibrillation with or without complete heart block. Open heart surgery at present has definite advantages and disadvantages. The latter are such that curative surgery by closed techniques, when feasible, will continue for some time to have a higher survival rate.

Open heart surgery for the complete correction of congenital and acquired cardiac lesions is now feasible in certain well-selected instances. In 1939 Gibbon reported the first successful bypass of the heart and lungs in a living patient.[1] The stimulus to undertake operations within the heart was sparked by his work. In June, 1948, the first successful instance of effective (closed) intracardiac valve surgery was reported by one of us.[2]

At present there are two distinctly different methods by which open heart surgery can be accomplished under direct vision. These are hypothermia (a reduction of body temperature) and extracorporeal circulation by use of the heart-lung (pump-oxygenator) apparatus. Each of the two techniques has distinct advantages over the other. It is contrariwise true that the disadvantages of each are prominent. Neither fully encompasses the ideal essentials of (1) rapid application and unconstrained use, (2) a completely bloodless field in which to work, (3) maintenance of normal physiology of the entire organism, (4) avoidance of air embolization, (5) preservation of the coagulability of the blood, (6) freedom from major conduction discrepancies of the heart, and (7) a heart that will spontaneously assume and sustain normal action when reverted into the systemic circulation.

Hypothermia

Hypothermia can be achieved rapidly by anesthetizing the patient to the second or the third plane of third-stage anesthesia and then immersing the patient in a container of cold solution, as advocated by Swan and Virtue.[3] In the past we have usually preferred the more deliberate and controllable reduction of body temperature by mattress cooling.[4] Recently, a modified Blades [5] technique has added to the adaptability of hypothermia in achieving open cardiotomy for atrial septal defects. The diagnosis of ostium primum defects is most accurately made after atriotomy on the right side of the heart and exploration of the septum. It has been our belief and practice that atrioseptopexy for ostium secundum defects by the closed technique is less hazardous to the patient, equally effective, and more rapidly accomplished. However, satisfactory closure of the ostium primum defects by the closed technique has not been dependable or always possible. Thus, closure has sometimes required open cardiotomy. Blades has recommended the circulation of a sterile cooling solution within the closed thorax. We have adapted the instillation of cold saline solution into the right open hemithorax and removal of the saline solution from the left side of the chest. It is possible thereby to observe directly the cardiac action during cooling and to reduce the body temperature from 98.6 F (37 C) to 85 F (29.5 C) within one and one-half to two hours in an adult.

The advantages of hypothermia are as follows: 1. It affords a means of accomplishing open cardiotomy for periods of time up to 15 minutes, with the body temperature reduced to 85 F. 2. The patient need not be heparinized. 3. The method can be executed with a minimal amount of equipment and personnel. 4. It reduces the oxygen requirements of the entire organism.

The disadvantages of hypothermia are as follows: 1. It produces alterations in the conduction mechanism within the heart. 2. It predis o shivering.

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Read before the Section on Anesthesiology at the 106th Annual Meeting of the American Medical Association, New York, June 5, 1957.

3. It predisposes to ventricular fibrillation. 4. It allows only a brief period of time for definitive surgery (15 minutes or less) while the heart is open.

Extracorporeal Circulation

Various investigators have proved that it is possible to bypass the right side of the heart,[6] to bypass the left side of the heart,[7] and to completely bypass the heart and lungs.[8] The most widely accepted method of open cardiac surgery with the bypass technique has been to exclude the heart and both lungs from the systemic circulation during the time utilized for definitive surgery (fig. 1).

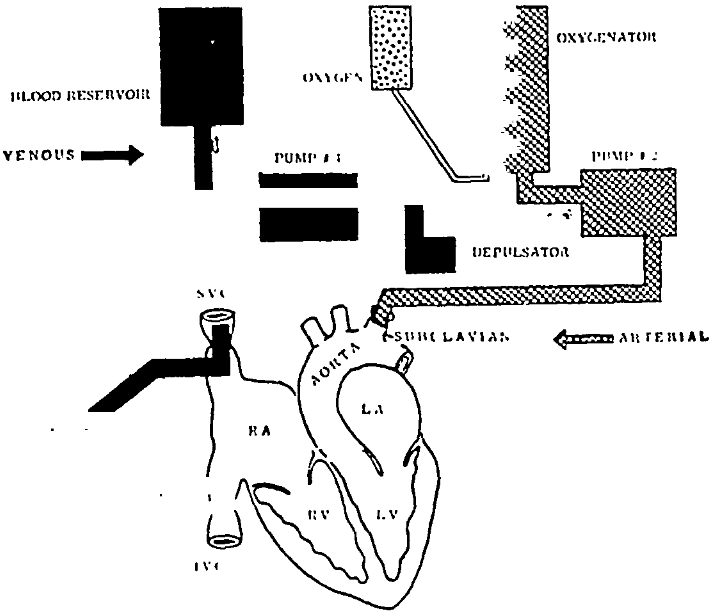

Fig. 1.—Diagram of open heart surgery with bypass technique in which circulation is diverted from heart and both lungs.

The advantages of using a pump-oxygenator are as follows: 1. The circulation can be diverted from the heart for at least 85 minutes (our longest period). 2. The surgery can be done in a relatively bloodless, quiet field. 3. More than one defect can be corrected during a single operation, i. e., ventricular septal defect and associated pulmonary stenosis.

The disadvantages of extracorporeal circulation are as follows: 1. Mechanical deficiencies of the pump, tubing, and/or oxygenator exist. 2. The patient must be heparinized. 3. Hemorrhage may occur during and after surgery. 4. There is a greater incidence of infection and septicemia. 5. Patients must be anesthetized for a considerable period of time prior to receiving benefit or correction of existing pathology. 6. Conduction defects are frequently major complicating factors, i. e., heart block and ventricular fibrillation.

We believe that, when extracorporeal circulation is to be used, the "heart-lung team" must consist of 15 well-qualified specialists. There are two anesthesiologists, four surgeons, two physiologists (to assimilate and disseminate information from the monitoring equipment), two individuals to control the pump-oxygenator, two suture nurses, two circulating nurses, and one hematology technician. It is, therefore, quite apparent that only in large medical centers, with ready access to such a large number of capable personnel, can open cardiotomy, utilizing extracorporeal circulation, be accomplished with acceptable results. The future will certainly bring refinements to both monitoring devices and the pump-oxygenator, so that fewer key members of the team will be required.

Types of Equipment

A variety of extracorporeal oxygenator systems are in general use for open heart surgery. The bubble method and the screen or rotating-disk type of systems currently are enjoying the most popularity and have had the widest clinical trial. These are all essentially filming types. The bubble method films the blood on the bubbles of oxygen introduced directly into the blood, whereas the screen or rotating-disk oxygenators film the blood in thin layers within an atmosphere of oxygen.

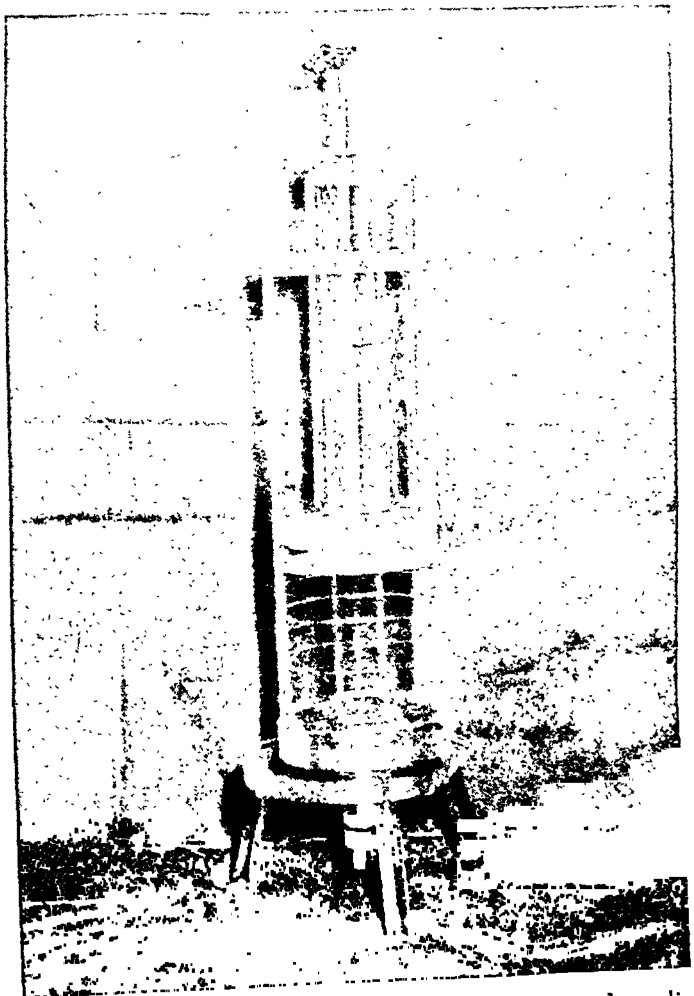

Fig. 2.—Bubble-type oxygenator made of nylon and acrylic plastic.

Homologous lungs and the semipermeable membrane have had some clinical application but not sufficient to permit a fair evaluation of the methods.[9] More recently, the use of the animals' own lungs has been undergoing experimental study. This is a promising method and should be more physiological than the artificial methods of oxygenation. Gollan, Blos, and Schuman have utilized hypothermia in conjunction with an extracorporeal oxygenator system.[10] The laboratory results suggest that the method has considerable merit for clinical application.

TABLE 1.—*Data on Fifty-three Patients on Whom Open Heart Surgery Was Performed*

Case No.	Age, Yr.	Weight, Lb.	Weight, Kg.	Diagnosis	Duration of Anesthesia, Hr., Min.	Extracorporeal Time, Min.	Blood Replacement: Citrated, Ml.	Blood Replacement: Heparinized, Ml.
1	6 mo.	14	6	*Ventricular septal defect*	4, 30	20	20	250
2	15	92	42	Tetralogy of Fallot	6, 30	56	3,000	9,000
3	14	120	54	Aortic stenosis	7, 0	10	1,000	500
4	21	172	78	Aortic stenosis	6, 15	17	650	3,000
5	5	30	14	Ventricular septal defect	6, 0	31	400	725
6	58	158	72	Aortic stenosis	4, 15	11	1,500	1,000
7	31	158	72	Aortic stenosis	6. 0	15	2,500	2,800
8	36	154	70	Aortic stenosis	5, 0	22	1,500	2,500
9	32	124	56	Atrioseptal defect	5, 0	3	1,250	3,450
10	14	152	69	Aortic stenosis	6, 0	11	1,500	4,250
11	37	122	55	Aortic stenosis	6, 30	12	2,000	3,500
12	15	113	51	Tetralogy of Fallot	7, 0	31	2,000	1,750
13	55	165	75	*Aortic stenosis*	5. 30	15	1,500	2,500
14	37	172	78	Aortic stenosis	7, 0	12	2,000	2,000
15	18	156	71	Ventricular septal defect	5, 30	14	1,000	2,000
16	45	134	61	Aortic stenosis	7, 0	15	2,500	1,500
17	38	114	52	Aortic stenosis	6, 0	11	2,500	1,500
18	44	163	74	Aortic insufficiency	6, 0	85	1,500	2,500
19	44	168	76	Aortic stenosis	6, 15	19	1,000	1,500
20	3 mo.	10	4	Transposition of great vessels	6, 0	13	300	1,500
21	19	110	50	Aortic stenosis	5, 0	33	1,500	1,000
22	7 mo.	13	6	Ventricular septal defect	5, 0	74	100	850
23	52	148	67	Aortic stenosis	5, 0	24	1,000	3,350
24	42	135	61	Mitral insufficiency	5, 30	10	1,500	1,800
25	33	121	55	*Aortic stenosis*	3, 30	25	1,000	2,600
26	43	191	87	Aortic stenosis	4, 30	21	1,300	1,800
27	59	139	63	Aortic stenosis	4, 30	11	1,100	2,500
28	50	161	73	Aortic stenosis	3, 30	14	500	1,500
29	52	150	68	Aortic stenosis	5, 30	14	1,500	2,500
30	52	161	73	Aortic stenosis	6, 15	30	2,500	4,250
31	49	152	69	Aortic stenosis	5, 30	20	2,000	3,750
32	43	168	76	Aortic stenosis	5, 30	9	3,000	3,000
33	1 mo.	6	3	Transposition of great vessels	5, 30	27	85	900
34	32	136	62	Aortic insufficiency	5, 30	26	3,000	1,350
35	25	90	41	Mitral insufficiency	4, 45	26	600	4,500
36	41	132	60	Mitral insufficiency	5, 30	21	1,500	2,500
37	44	158	72	Aortic stenosis	7, 15	15	1,500	2,500
38	31	152	69	Mitral insufficiency	5, 30	26	2,000	5,500
39	43	172	78	Aortic insufficiency	4, 15	26		2,000
40	3	27	12	Tetralogy of Fallot	4, 30	30	200	900
41	58	161	73	Aortic stenosis	5, 15	11	1,125	2,225
42	16	105	48	Ventricular septal defect	5, 0	32	1,500	3,300
43	46	92	42	Aortic stenosis	6, 15	9	2,000	2,000
44	63	158	72	Aortic stenosis	6, 15	16	3,000	3,200
45	10 mo.	12	5	Ventricular septal defect	5, 15	50	215	950
46	7	41	19	Tetralogy of Fallot	5, 0	42	525	2,575
47	9	51	23	Ventricular septal defect	5, 0	30	450	1,500
48	53	144	65	Aortic stenosis	4, 45	36	2,000	3,000
49	55	121	55	Aortic stenosis	6, 0	28	2,000	4,250
50	42	126	57	Aortic stenosis	5, 30	37	2,500	2,000
51	37	163	74	Aortic insufficiency	5, 15	60	1,100	3,000
52	51	151	68	Aortic stenosis	4, 0	37	1,000	3,000
53	9	48	22	Ventricular septal defect	4, 45	50	500	1,600
Averages	32.6	125.4	54.8		5, 30	26	1,400	2,450

The equipment used in our experience is a bubble-type oxygenator, designed by Gilman and Gemeinhardt.[11] It is a vertical column made of nylon and acrylic plastic, with the bubbling tube, defoaming chamber, and reservoir combined in a single unit (fig. 2). The blood is moved by the use of a Sigmamotor pump. The oxygenator, with the exception of the outer column, is made of nylon and is best sterilized by the autoclave. The outer column of heavy acrylic plastic is sterilized by boiling. This is an important consideration, as the danger of subacute bacterial endocarditis, particularly in aortic stenosis, is great if cold sterilization with benzalkonium (Zephiran) chloride solution is utilized. We have had five cases of septicemia due to Pseudomonas aeruginosa, all of which proved fatal, when cold sterilization was used for the oxygenator. Since the mode of sterilization was changed there has been no subsequent infection due to Pseudomonas organisms.

Selection of Cases

We have performed 53 operations in which the circulation has been completely diverted from the heart and lungs. The existent pathology was as follows: ventricular septal defects, 8; ventricular septal defects and pulmonary stenosis (tetralogy of Fallot), 4; transposition of great vessels, 2; atrial septal defects, 1; aortic stenosis, 30; aortic insufficiency, 4; and mitral insufficiency, 4.

According to table 1, the variations in age of the patients were from 1 month to 63 years of age, with 32.6 years as the average. The weight variations were from 6 lb. (2.7 kg.) to 191 lb. (86.6 kg.), with 125.4 lb. (57 kg.) as the average. The duration of anesthesia varied from the shortest period of 3 hours and 30 minutes to the longest of 7 hours and 15 minutes, with 5 hours and 30 minutes as the average period of anesthesia. Extracorporeal bypass times were as short as 3 minutes in one case and as long as 85 minutes in the longest case, with 26 minutes as the average in the 53 cases.

Anesthesia Management

Meperidine (Demerol) hydrochloride has been used in conjunction with atropine sulfate for preliminary medication in all patients with congenital heart disease. The usual dosage of meperidine hydrochloride administered has been 1 mg. per pound of body weight, but it has not exceeded 100 mg. in any patient. Infants and small children, who were judged by the anesthesiologist to be inadequately sedated when brought to the operating room, have received 6 to 10 mg. of thiopental sodium administered intramuscularly for each pound of body weight. Preliminary medication in the group with acquired heart disease has consisted of the oral ingestion of a short-acting barbiturate 90 minutes prior to the induction of anesthesia; atropine sulfate has been administered by hypodermic injection 30 minutes later.

All anesthesia equipment and supplies that may be used during the anesthetization period have been prepared and placed in a readily available location. The patients are carefully surveyed in the operating room, prior to induction, for evidence of hypotension, tachycardia, fever, or any evidence of heart failure. Venous cannulas, previously placed, are rechecked to ascertain patency.

The trachea is intubated under direct vision. The largest caliber catheter that can be introduced without trauma is inserted. Infants and children are especially prone to develop laryngeal edema from trauma or pressure. Because of this fact, tubes without cuffs are utilized if the patient is less than 12 years of age.

Respirations are controlled from the time of intubation until the chest walls have been made airtight after closure, and no evidence of pneumothorax in either hemithorax exists. Voluntary respirations rapidly return, but may require assistance by the anesthesiologist for 10 to 15 minutes before becoming adequate. The major physiological changes, prior to cannulation of the arterial and venous system, occur from bilateral pneumothoraxes and the depressant effect of prolonged anesthesia in cardiac patients. Each patient has received 1.5 mg. of heparin intravenously for each kilogram of body weight. The patient is heparinized for 5 to 10 minutes prior to the insertion of the cannulas.

The venae cavae are isolated, and umbilical tapes are passed around them at their entrance site into the right atrium. One of the subclavian arteries is isolated and cannulated. The coronary sinus may be cannulated if the operation is to be performed for aortic valvular disease. The coronary sinus is catheterized, prior to open cardiotomy, by a closed technique. The cavae are catheterized via either the right auricular appendage or the right atrial wall. The catheterization of the cavae should be last, as it causes partial obstruction of the cavae. This obstruction increases the venous pressure and reduces cardiac output, while the heart continues to maintain the circulation.

Immediately after complete arterial and venous cannulation the pump-oxygenator is started, and the patient placed on partial bypass. This phase of partial bypass affords the opportunity to determine the patency of cannulas and to ascertain that the mechanical apparatus is in correct working order. If the apparatus is found to be in proper functioning order, the umbilical tapes are secured tightly around the cavae. This maneuver excludes the heart from the circulation except for the coronary flow, and the patient is on total bypass.

At our clinic the flow rate is not predetermined by body size alone but is established principally by the venous return to the oxygenator. The venous return is increased to the maximal obtainable flow, and the arterial flow is brought into exact balance. If the blood volume is deficient, the oxygenated blood in the arterial reservoir will be quickly depleted when precalculated flow rates are used. With our present technique it is possible to keep in proper blood volume balance and to detect quickly inadvertent venous catheter obstruction.

Retrograde coronary sinus perfusion is started in most patients with aortic valvular disease after the aorta has been cross clamped and opened. The flow of the coronary sinus perfusion is regulated, so that only a small amount of unoxygenated blood may be observed coming out of the coronary artery ostiums. A high flow not only will cause the field to be obscured by blood but also, we believe, has a deleterious effect because of the congestion of the delicate capillary network of the ventricular myocardium. The usual flow into the coronary sinus perfusion varies from 75 to 200 ml. per minute.

Total bypass is maintained with flow rates of 50 to 80 ml. per kilogram of body weight. The body chemistry has been kept within reasonable limits during these procedures, and destruction of the blood elements has been minimal (table 2). During total bypass the mean blood pressure has been maintained with the Sigmamotor pump between 60 and 70 mm. Hg. After completion of the definitive intracardiac surgery and closure of the cardiotomy wound, the perfusion flow rate is reduced by approximately one-third. The tourniquets are removed from around the cavae, and the heart is allowed to resume normal function.

Manual compression of the breathing bag may be carried out by the anesthesiologist during open cardiotomy in order to maintain a quiet mediastinum. Severe diaphragmatic contractions are best controlled by constant administration of succinylcholine chloride. No anesthetic gas, other than oxygen, has been required after total bypass. The patients, who are lightly anesthetized, frequently will obey spoken commands (i. e., to open or close their eyes), but they have no memory of being awake or complaints related to pain.

TABLE 2.—*Laboratory Data on Seventeen Patients Who Had Total Cardiopulmonary Bypass*

Case No.	Oxygen Saturation, %	pH	Hemolysis, %	Hemoglobin, Gm./100 Cc.	Hematocrit, %	White Blood Cells, per Cu. Mm.	Platelets, per Cu. Mm.	Carbon Dioxide, Vol. %	Lactic Acid, Mg./100 Cc.
				Before Perfusion					
1............	95.3	7.39		11.2	39	8,500	140,000		
2............	100	7.42		15.2	47	7,600	150,000		
3............	100			12.6	37	14,700	240,000		
4............	100								
5............	71.9			17.3	55	13,850	130,000		
6............	100			15.4	47	10,300	310,000		
7............	100	7.37		15.4	49	11,500	170,000		
8............	100	7.39		15.2	46	11,400	260,000		56
9............	100	7.41		13.4	42	12,950	360,000		71
10............	100	7.40						33.8	
11............	100	7.39		14.5	45	11,000	210,000		101
12............	100	7.40		14.4	43	6,250	370,000	38.9	56
13............	100			13	40	9,500	180,000	35.3	72.5
14............	100			17.7	46	7,950	120,000	31.9	85
15............	100							31.4	62
16............	100	7.39		15	47	10,250	320,000	32.9	69
17............	100							43.1	59
				After Perfusion					
1............	100	7.39		8.8	30	4,100	150,000		
2............	96.4	7.48	7.9	13.2	42	8,800	180,000		
3............	100		3	13.6	41	12,950	160,000		
4............	100								
5............	100			16	50	11,650	110,000		
6............	100			14	44	9,500	270,000		
7............	100	7.39	12.6	14.2	44	10,450	150,000		
8............	100	7.37	15.5	13.4	41	8,000	200,000		91
9............	100	7.36	13.2	11.2	35	8,900	240,000		126
10............	100	7.37	13.8						
11............	100	7.40	17.7	13.4	40	9,200	70,000		138
12............	100	7.40	18.3	12	36	7,850	410,000		240
13............	100		17.2	11.2	36	8,500	140,000		159
14............	100		21	15.6	40	6,000	120,000		85
15............	100		16.6						103
16............	93.3	7.37			41	7,050	250,000		112
17............	97.8			21					112

Once spontaneous cardiac action has been obtained, the cannulas are removed from the right atrium to allow better filling. The arterial cannula is removed last, and a heparin neutralizing agent is injected intravenously. We have used both protamine sulfate and hexadimethrine bromide (Polybrene), which is a quaternary ammonium salt and a linear polymer, for deheparinization. We prefer hexadimethrine bromide because of its more predictable action in prolonged neutralization of heparin.[12]

We have found that the body temperature is reduced in all cases in which the heart and lungs are excluded from the circulation, unless a warming mechanism is incorporated with the bypass apparatus. The temperature is reduced in direct proportion to the length of time of total bypass and inversely to the size of the patient.

The assimilation and recording of data are difficult. We have therefore devised a standard form that has proved useful and adaptable for chronological recordings. We believe that universally well-kept records will aid all of us in establishing the proper indications and contraindications for extracorporeal circulation (table 3).

Results

The operative mortality is directly related in each case to the nature of the pathological defect or problem and to the severity of the clinical condition of the patient. Thus, the mortality encountered in the correction of septal defects and in the tetralogy of Fallot has been zero, while that in complete transposition of the great arteries has been 100%. Certain inherent hazards and risks specifically related to the development and early utilization of the extracorporeal perfusion apparatus are apparent in any consideration of the immediate causes of death, as shown in table 4.

Conclusions

During the developmental stages of the application of the method of total cardiopulmonary bypass, the operative mortality has been high but not prohibitive. At the present time it is felt that certain inherent technical and mechanical difficulties which attend its use are sufficiently serious to preclude its general utilization for those lesions which may be treated effectively by existing closed techniques. It is obvious that such restriction of its use to the more severe types of cardiac deformation must ensure a continuation of high attendant risks and mortality.

TABLE 3.—*Data Sheet Regarding Extracorporeal Circulation Method in Open Heart Surgery*

No............ Date...........
Name............................ Age...... Weight......Lb.......Kg.
Diagnosis......................... Operation............................
Preoperative Data:
    Lee & White coagulation time............min..............sec.
    Prothrombin time.......................%
    Hemoglobin.............Gm./100 cc. Hematocrit.............%
    Oxygen saturation......................
    Shunt or pressure gradient (liters/min.)...............mm. Hg
    Digitalized........................ ECG..........................
    Temperature.........F Blood pressure......... Pulse.........
Preoperative Blood Volume:
    Total plasma volume.....cc./kg. (35-45).....cc./sq. m. (1,300-1,700)
    Total packed
      red blood cells..........cc./kg. (30-40).....cc./sq. m. (1,150-1,550)
    Total blood volume........cc./kg. (65-85).....cc./sq. m. (2,500-3,200)
Start of Anesthesia.........................
    Anesthetics and amounts...
    Techniques ....
        Lee & White time....................
        Platelets ....
Start of Surgery...........................
    Amount of citrated blood prior to heparinization...............cc.
    Heparin dose..........amount..........mg. I.V. (1.5 mg./kg.)
    15-min. postheparin studies
        Lee & White...........min.............sec.
        Platelets ....
        Hemoglobin...........Gm./100 cc. Hematocrit...........%
        Carbon dioxide content.....mEq. Oxygen saturation.....%
Total Bypass Time.........min..........sec. Flow Rate.........cc./min.
    Oxygen saturation during bypass..............................%
    Amount of heparinized blood.................................cc.
    Antiheparin agent................... dosage...................
        Hexadimethrine, 1.5 mg./kg.
            or
        Protamine, 1.5 mg./kg.
    Hypotension during *subsequent* 30 min..........................
    Oxygen *saturation after* bypass............%.............min.
Fifteen-Minute Postheparin Neutralization Studies
    Lee & White...........min.. ....sec. Platelets...........
    Hemoglobin.............Gm /100 cc. Hematocrit.............%
    Prothrombin..........% Carbon dioxide content.........mEq.
Amount of Citrated Blood After Neutralization......................cc.
End of Surgery.................. End of Anesthesia.................
    Postoperative temperature...................................F
Complications During Anesthesia
    Bradycardia .... Tachycardia ....
    Hypotension .... Hypertension ....
    Heart block .... Ventricular fibrillation ....
    Pulmonary edema .... Hemorrhage ....
    Caval obstruction .... Mechanical ....
Postoperative Blood Volume:
    Total plasma volume.....cc./kg. (35-45).....cc./sq. m. (1,300-1,700)
    Total packed
      red blood cells..........cc./kg. (30-40).....cc./sq. m. (1,150-1,550)
    Total blood volume........cc./kg. (65-85).....cc./sq. m. (2,500-3,200)
Two-Hour Postoperative Blood Studies
    Lee & White...........min............sec. Platelets...........
    Hemoglobin.............Gm./100 cc. Hematocrit.............%
    Promthrombin time......% Carbon dioxide content......mEq.

TABLE 4.—*Causes of Death During Anesthesia and Surgery*

Ventricular fibrillation	6
Ventricular fibrillation and complete heart block	2
Air embolization of coronary arteries	1
Pulmonary edema	4
Hemorrhage	1
Total	14

As the various "bugs" are progressively diminished and eliminated, the more widespread, elective application of open cardiotomy in many less threatening conditions may be countenanced. However, we believe that curative surgery by the closed techniques, when feasible, has, and will continue to have, a higher survival rate. Open cardiotomy with direct-vision surgery is feasible and indicated at the present time in ventricular septal defects, in the tetralogy of Fallot, and in severe cases of aortic stenosis. The use of the extracorporeal circulation method represents the difference between palliation and cure in most of these conditions.

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This study was supported by the Mary Bailey Foundation for Heart and Great Vessel Research, Philadelphia, and the Institute for Cardiovascular Research of the Hahnemann Medical College and Hospital of Philadelphia.

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CARDIAC REHABILITATION

QUESTIONNAIRE SURVEY OF MEDICAL DIRECTORS IN INDUSTRY

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Data obtained from 19 industrial organizations and representing 251,480 workers showed that nine organizations had hired cardiac patients during the past year. Among 19,321 new employees there were 242 with cardiovascular disease, including 53 classified as rheumatic and 24 as arteriosclerotic. All of the 19 organizations reported that it was their policy to return an employee to his job after recovery from an acute cardiac episode. The total number of deaths attributable to cardiovascular disease was 181 in an employee population of almost 170,000 and only 13% of these deaths occurred at work while 87% occurred off the job. Absenteeism is not a major problem among cardiacs; the major reason cited by industries reluctant to hire cardiacs is the threat of monetary loss from compensation claims, sickness benefits, or pension benefits. There is a need for more facts regarding the work experience of cardiac patients and the impact of workmen's compensation legislation upon employment policies; it will also be necessary to educate practicing physicians, patients, and industry concerning the rehabilitation of cardiac patients and to encourage cooperation between physicians in private practice and those in industry.

As part of a nationwide study of the rehabilitation of patients with cardiovascular disease, a detailed questionnaire was sent to the medical directors of a variety of industries in the United States to obtain information on the following questions: (1) general characteristics of the industries surveyed; (2) policies regarding employment of cardiacs; (3) actual number of known cardiacs hired; (4) magnitude of the problem, as reflected in the percentage of employees with heart disease, number of heart attacks, number of deaths due to cardiovascular disease, number of terminations due to heart disease, and absenteeism among employees during the preceding year; and (5) experience with workmen's compensation cases among cardiacs. We hoped, on the basis of information obtained in this survey, to better evaluate the problems involved in the rehabilitation of the cardiac in industry.

Although large in total number of employees, most of the industries surveyed were composed of autonomous plant units, often located in widely separated parts of the United States. This autonomy resulted in variations as to the amount of information concerning cardiac workers available because of differences in methods and types of health records, variations in availability of information contained in the records, and variations in the attention directed to the problems of the cardiac in the industry surveyed. Because of these problems and be-

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cause of the detailed nature of the questionnaire, it was possible for only 19 of the medical directors surveyed to provide us with sufficient information on which to draw conclusions for this study.

Results

Characteristics of the Industries Surveyed.—The types of industries surveyed are illustrated in table 1. They varied from life insurance and publishing to airplane manufacturing, flour milling, and copper smelting. The employees per industry ranged from approximately 1,000 to 40,000. A little over 30% of the workers surveyed were under 35 years of age, while 17.5% were over 55.

TABLE 1.—*Age Spread of Employees in Industries Surveyed*

Industry	Total Plant Population	Age, Yr., % Under 35	35-54	Over 55
Airplane manufacturing	31,655	32.8	55.6	11.6
Pharmaceutical	2,312	43.0	44.0	13.0
Petroleum products	7,156	25.2	58.6	16.2
Electric utility	26,106	19.8	55.5	24.7
Flour milling	1,960	44.0	46.0	10.0
Copper smelting	1,200	32.0	48.0	20.0
Chemical	1,900	25.0	50.0	25.0
Chemical	11,286	53.0	36.0	11.0
Communications	40,000	60.0	30.0	10.0
Battery manufacturing	999	...	51.0	49.0
Electrical appliances	30,000	55.0	35.0	10.0
Automobile manufacturing	10,870	41.0	40.0	19.0
Textiles	1,025	35.0	50.0	15.0
Publishing	4,664	25.2	44.4	30.4
Glass	8,000	37.0	53.0	10.0
Life insurance	17,347	60.0	36.0	4.0
Total	196,480	Av. 36.7	45.8	17.5
Chemicals	16,000			
Chemicals	11,000			
Glass	28,000			
	55,000			
Total	251,180			

All 19 industries employed full-time physicians, and they all required preemployment physical examinations of their employees. Most of the examinations included chest roentgenograms for all employees and electrocardiograms for those over 40 or for those in whom the history or physical examination indicated the possibility of cardiovascular disease. In addition, periodic health surveys were done in the majority of industries, although usually only on executives. Only one of the industries had a mandatory periodic health survey of all employees.

The types of employees in the industries surveyed included executives, clerical or white collar workers, and skilled, semiskilled, and unskilled workers. The percentages of workers in each of these categories varied from industry to industry, but exact figures were not obtained and were not considered necessary for the purpose of this survey.

Policies Regarding Employment of Cardiacs.—Only 9 of the 19 industries had a stated policy to hire cardiacs. Seven industries had a definite policy against hiring such workers, while in three industries this information was not available.

In an attempt to determine what some of the factors might be that influenced the industries not to hire cardiacs, one of the questions asked was whether compensation, sickness benefit, or pension liability were of importance in determining employment policy. The answers were as follows: for compensation liability, 18 answered yes, and 1, no; sickness benefit liability, 17 answered yes and 2, no; and for pension liability, 16 answered yes and 3, no. It is apparent that concern regarding potential or possible liability in these three categories is of importance in the policies of certain industries regarding the hiring of cardiacs.

Number of Cardiacs Hired.—Eight industries reported that they had hired cardiacs during the past year. In this period 242 people with known cardiovascular disease were among the total of 19,321 new workers employed. Asymptomatic hypertension was the most common diagnosis, followed in order by rheumatic heart disease, heart disease type unspecified, and arteriosclerotic heart disease. Actually, only 24 of the new employees had been given a diagnosis of arteriosclerotic heart disease, despite the frequency of this disease in the adult male population of this country (table 2).

Magnitude of the Cardiac-in-Industry Problem.—Although the percentage of persons with diagnosed or existing cardiovascular disease varies greatly from industry to industry because of differences in the age of the employees and the percentage of males employed, it is likely, on the basis of information obtained in this survey, that approximately 8% of the employees in the industries surveyed had cardiovascular disease. This information was not available from all the medical directors, but, of those who reported, this was about the average figure.

TABLE 2.—*Types of Heart Disease Present in New Employees (Hired Within Past Year) in Eight Industries*

	Industries								
Total no. of employees hired	9,877	325	460	1,000	1,012	5,000	647	1,000	Total 19,321
No. with cardiovascular disease hired	95	6	1	50	35	16	26	13	242
Arteriosclerotic heart disease	21	...	...	...	...	2	1	...	24
Rheumatic heart disease	5	3	...	20	...	10	5	10	53
Hypertension	55	2	...	30	...	2	13	3	105
Cerebral vascular disease	7	...	...	...	...	...	...	...	7
Peripheral arterial disease	2	1	...	...	...	2	...	...	5
Type unspecified	5	...	1	...	35	...	7	...	48

There was great variation in the number of employees reported to have suffered heart attacks in the past year. Two industries of approximately the same size reported that 120 and 4 employees, respectively, had suffered heart attacks. The 120 heart attacks reported by one industry, with 26,106 employees, constituted more than one-half of the total of the 226 reported by all the industries (table 3). Even if the figures reported by the one industry with the highest incidence of heart attacks were generally applicable to the industry it is apparent that this does not constitute a truly major problem for industry, but it is a factor which must be considered in view of changing practices in the administration and interpretation of workmen's compensation laws.

It must be realized, also, that the great majority of workers who suffer heart attacks return to work for their old employer, and a suitable job must be found for them if they are unable to perform their previous work. In our survey all 19 of the industries reported that it was their policy to return an employee to his job after recovery from an acute cardiac episode. Only one industry added any qualification, and that was "if a suitable job is available." This policy is of far more importance in the rehabilitation in industry of workers than are the policies regarding initial employment of cardiacs, because the vast majority of people who develop cardiovascular disease do so after they reach an age when they should be earning a living at work.

There were reported to be only 54 workers, exclusive of those who died, whose employment was terminated because of disability due to cardiovascular disease. Although there was considerable variation from one industry to another, this number appeared to be only a small percentage of the total number of workers whose employment was terminated (table 3).

The total number of deaths attributable to cardiovascular disease was 181 in an employee population of almost 170,000 (table 4). There were a few industries that did not have accurate information on this question, and their replies were, therefore, not included in the tabulation of these results. In considering the possible implications of these figures to workmen's compensation liability, it is of interest that only 13% of the deaths due to cardiovascular disease occurred at work, while 87% occurred off the job.

TABLE 3.—*Heart Attacks in Preceding Year in Eight Industries*

Total Plant Population	Heart Attacks During Past Year			No. of Workers Whose Employment Terminated Because of Cardiovascular Disease (Exclusive of Deaths)	% of Total No. of Workers Whose Employment Was Terminated
	Total	At Work	Away from Work		
26,106	120	12	108	30	18
1,960	3	1	2	1	33
11,200	16	8	8	4	20
1,900	4	2	2	...	...
40,000	37	0	37	10	2.4
30,000	4	2	2	3	— 1
1,025	18	3	15	3	±10
4,664	24	0	24	3	?
116,855	226	28	198	54	

Absenteeism is another factor which is often considered in the employment of any worker. Ten of the medical directors surveyed did not have specific information on absenteeism among employees known to have cardiovascular disease. Five indicated that absenteeism in this group was above the plant average, while four considered it comparable in the groups with and without cardiovascular disease.

Experience with Workmen's Compensation Cases Among Employees.—The possibility of workmen's compensation liability has become an increasingly important reason given by employers for their reluctance to hire workers known to have cardiovascular disease. That this may be more of a possible than an actual problem at the present time is indicated from the results of our survey. The entire group of industries, with three exceptions who did not have the information available, reported only 10 workmen's compensation settlements resulting from cardiovascular disease during the past five years. This is a relatively small number, considering the total number of employees and the probable number of acute episodes of illness due to cardiovascular disease which occurred at work during this period. The fact that there were so few compensation settlements may be due to the fact that there were good sickness or other benefits which helped the individual defray the cost of illness, and it also seems to indicate that on the whole the industries surveyed must have maintained good relations with their employees.

TABLE 4.—*Deaths Due to Cardiovascular Disease for Preceding Year in Ten Industries*

Total Plant Population	Deaths, Total No.	Deaths Occurring at	
		Home	Work
31,655	56	52	4
2,312	7	7	0
26,106	46	38	8
1,960	4 (2 not known)	1	1
1,200	7	0	7
1,900	3	1	[illegible]
40,000	47	47	[illegible]
30,000	7	5	[illegible]
28,000	1	1	0
4,664	3	3	0
167,797	181	155	24

Comment

The results of this survey confirm the previous report of Olshansky and others [1] that many employers are reluctant to hire cardiacs, even if they do not have a definite policy against it. They found in their greater Boston survey that only 99 known cardiacs were hired among 13,431 workers employed during a six-month period. In our survey we found that 242 persons with cardiovascular disease were hired among 19,321 new employees.

The factors which determine employment policy were found by Olshansky and co-workers [1] to include (1) workmen's compensation liability, (2) lack of suitable jobs, (3) sickness and health insurance liability, (4) low productivity, (5) absenteeism, and (6) limited in-plant mobility. In a survey of a variety of industries covering over 1,375,046 employees, Kline[2] found that the fact that physical demands of work exceeded the physical capacity of the cardiac was listed by 71% of the industrial physicians surveyed as a major reason for reluctance in hiring cardiacs. Next in order of importance were risk of monetary loss arising out of compensation claims, 42%; consideration of cardiacs to be a heavy burden on company-sponsored insurance programs, 30%; insufficient medical staff, 12%; and policy of the personnel department, 11%. Only 8% of the physicians surveyed considered cardiacs to be unsafe workers and only 3% considered them to be inefficient.

Our results agree with these earlier findings that the threat of monetary loss from compensation claims, sickness benefits, or pension benefits is a major reason cited by industries for their reluctance to hire cardiacs. The second major factor seems to be concern that the physical demands of available jobs are likely to exceed the capacity of the cardiac, particularly when the industries already have in their labor force a large number of employees (approximately 8%) with cardiovascular disease to occupy jobs which are considered to have physical stresses equal to the capacity of the cardiac. Other factors, such as absenteeism, low productivity, and safety, do not appear to be major factors in determining employment policy. As a matter of fact, it has been found by many physicians in industry, including Franco at the Consolidated Edison Company in New York,[3] Greer at the Gillette Safety Razor Company in Boston,[4] and Brown in the Railroad Industry in New South Wales, Australia,[5] as well as others,[6] that absenteeism among cardiacs is not a major problem. They are safe workers when properly placed; usually they have a higher average productivity than the noncardiacs, and the turnover among this group is below the average for noncardiacs.

The actual monetary loss to employers as a result of compensation settlements to cardiacs would not appear to be very high in comparison to the over-all cost of workmen's compensation. We found only 10 compensation settlements in a five-year period. Olshansky and co-workers[1] found that, of 100 employers, 22 had claims against them. There was a total of 78 compensation claims, but 45 of these were against a single employer. Although these numbers are not great, they still constitute a threat to any individual employer who hires cardiacs.

It is well for the practicing physician to be aware of some of the problems which physicians in industry and which industry in general consider important in the employment of cardiacs. It is particularly important for the practicing physician to realize that the great majority of industries will return an old employee to his job or to a job which is within his capacity if he suffers an acute cardiovascular illness during his tenure of employment. If the practicing physician appreciates the problems faced by the industrial physician he can aid his patient with cardiovascular disease to be productively placed in a job which is dangerous to neither himself nor his fellow employees, which he can perform with equal or greater skill than the noncardiac, and which, hopefully, does not impose added financial risk on the employer. In order to do this, however, the family physician must appreciate the fact that the great majority of cardiacs can work productively and safely if properly placed.

Many problems in the rehabilitation in industry of the worker with cardiovascular disease remain to be solved, but progress can be made by (1) education of physicians regarding the employability of most cardiacs; (2) education of the patient about heart disease and about his own capacity for work and enjoyment of life; (3) education of industry regarding the present state of our knowledge about work capacity of cardiacs and their absenteeism, productivity, and safety as well as the facts about compensation, sickness benefit, and pension liabilities; (4) continued research, both in industry and in the laboratory; (5) a broad legislative study of the whole field of workmen's compensation as recently recommended by Lane in his comprehensive review[7] in the hope that from this will come legislative changes that would either remove the degenerative diseases from the classification of industrial accidents or produce laws which would not be deterrents to the rehabilitation of the handicapped worker; and (6) continued and increased cooperation between the physicians in private practice and those in industry for the benefit of the patient.

Summary

A questionnaire survey on the rehabilitation of workers with cardiovascular disease in industry has been carried out. The medical directors of 19 diversified industries operating plants in widely scattered areas of the United States and representing a total working force of approximately 251,000 participated. Only 9 of the 19 industries had a stated policy to hire cardiacs, and during the preceding year only 242 were hired in a total of 19,321 new workers employed.

Factors considered of importance in industry's reluctance to hire cardiacs included (1) possible compensation, sickness benefit, or pension liability; (2) the large number of cardiacs already employed who developed their disease while at work; (3) lack of suitable jobs for cardiacs in addition to those already employed, and (4) a variety of lesser factors.

The actual number of compensation settlements for cardiac cases was small in the industries surveyed so that at the present time this appears to be more of a possible than an actual threat of monetary loss to the employer.

Many problems in the rehabilitation of the cardiac worker in industry remain to be solved but progress can be made by (1) education of practicing physicians, patients, and industry; (2) continued research in industry and in the laboratory; (3) a broad legislative study of the whole field of workmen's compensation; and (4) continued and increasing cooperation between physicians in private practice and those in industry.

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This study was aided by a grant from the U. S. Public Health Service.

Drs. Leonard Goldwater and Edward Kline and the Academy of Occupational Medicine assisted in this study.

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CARDIAC REHABILITATION

QUESTIONNAIRE SURVEY OF GENERAL PRACTITIONERS

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As part of a nationwide study of the rehabilitation of patients with cardiovascular disease, questionnaires were sent to general practitioners and cardiologists asking their definitions of rehabilitation, especially as applied to persons with cardiovascular disease; their opinions about the major problems in rehabilitation of patients with cardiovascular disease; and their opinions as to how these problems might best be solved. They were also asked to comment on their own experiences in the rehabilitation of patients with cardiovascular disease. The opinions of the cardiologists will be reported elsewhere.[1] In addition, a group of industrial physicians were questioned as to their experiences relative to the rehabilitation in industry of persons with cardiovascular disease. These opinions are summarized in an accompanying report (see this issue, page 787).

This report is concerned with the opinions of 40 members of the Academy of General Practice from

> *Rehabilitation, especially as applied to persons with cardiovascular disease is a positive action, the aim of which is to get the patient (and his relatives) in a healthy optimistic state of mind, and his body in as good functioning capacity as is possible, so that he may happily return to society as a producing, independent, creative member. The most important problem is the elimination of fear and misinformation about heart disease in the patient and his family. Using congenital heart disease as an example, the greatest situation to be overcome, in the rehabilitation of a patient, is the avoidance of problems resulting from over-restriction imposed by parent or doctor. Education of physicians, such as now practiced by the American Heart Association, to include such facilities that aid in the placement of cardiacs in suitable jobs, is one important approach to rehabilitation.*

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widely scattered areas of the United States. The questions asked and the answers given were as follows:

Question 1.—What would you consider a proper definition of rehabilitation, especially as applied to persons with cardiovascular disease?

Answer: A definition which included most of the ideas expressed by the group of general practitioners surveyed was that of Dr. Richard B. Elgosin of Hamden, Conn. Dr. Elgosin stated: "Rehabilitation is a positive action, the aim of which is to get the patient (and his relatives) in a healthy optimistic state of mind, and his body in as good functioning capacity as is possible, so that the patient may happily return to society as a producing, independent, creative member."

Question 2.—What do you believe are the major problems faced by the practicing physician in his efforts to rehabilitate individuals with cardiovascular disease?

Answer: The problems, as set forth by the general practitioners, are tabulated in the table. They are listed in order of their relative importance. The most important problem was considered to be the elimination of fear and misinformation about heart disease in the patient and his family. This was also considered to be the number one problem by the cardiologists surveyed.[1]

Major Problems Faced by Practicing Physician in His Efforts to Rehabilitate Patient with Cardiovascular Disease

	Degree of Importance		
	1	2	3
Elimination of fear and misinformation about heart disease	18	1	1
Economic problems faced by disabled cardiac patient	8	1	1
Finding of work within the patient's physical capacity	4	2	...
Lack of adequate time for family physician to counsel patient	3	1	...
Medical problems—including accurate diagnosis.	3	...	...
Lack of trained personnel in related fields	1	2	1

The second most important problem was considered to be the personal economic problems faced by the cardiac. This reflects the awareness on the part of the family physician of the potentially devastating effect of heart disease on the patient's ability to earn a living. As the physician best acquainted with the patient and his family and the one who is aware of the environment in which the patient lives and works, the general practitioner is often in the best position to observe the economic problems. It is of interest that the cardiologists did not consider this to be a problem of major importance.[1]

Three physicians expressed particular concern about the lack of time in their busy practices to permit proper counseling of the cardiac patient. This is a problem which is faced by many busy practicing physicians, and it is one of the reasons why the patient must, at times, turn to the consultant cardiologist for such counsel and advice.

Question 3.—What do you think should be done to solve some of these problems?

Answer: There was general agreement by the general practitioners and the cardiologists regarding the principal solution to the problems of cardiac rehabilitation. Twenty-five of the 40 general practitioners queried thought that the most important single step in the solution to some of the present problems in cardiac rehabilitation could be made by education about heart disease. First, it was emphasized that education of the physician about heart disease could eliminate some of these problems, particularly iatrogenic heart disease and over-restriction of the cardiac. Education of the patient and his family about the more optimistic aspects of heart disease was considered to be a fundamental step in cardiac rehabilitation. It was thought that education of management and labor would result in more employment of cardiacs in industry. The view is shared by physicians in industry.

The educational efforts among physicians and the public by the American Heart Association and its affiliates was endorsed enthusiastically by the general practitioners, and it was frequently suggested that there should be further expansion in this field by the heart association.

Seven doctors felt the need of increased availability of facilities to aid in the placement of cardiacs in suitable jobs. Lack of such facilities in less populated areas of the United States was apparent from the responses to this question. Two doctors proposed increased availability of disaster insurance. Another wanted more rehabilitation centers, and yet another suggested adjustment of state compensation laws. The answers to this question contained a number of very valuable comments on cardiac rehabilitation, several of which follow:

1. Dr. Keith Hammond of Paoli, Ind., thought that there was first of all a need to emphasize that there is such a thing as rehabilitation in cardiovascular disease.

2. Dr. Stanley R. Truman of Oakland, Calif., thought that rehabilitation correlated more highly with attitudes and intelligence than with type of heart disease.

3. Dr. Harvey Runty of DeWitt, Neb., pointed out the hardy characteristics of the farm people who constitute his rural practice. Most of his cardiac patients wait too long to seek medical help, and after treatment it is difficult to enforce a proper degree of restriction. He practices "in a rural area where such a thing as malingering or being willing to 'set around' is practically unknown." He goes on to comment: "My patients have tremendous drive

and ambition to keep working. It is not unusual to have patients work who have to stop and rest every 15 to 20 feet. They insist on milking, feeding cows, chickens, etc. They make treatments most difficult, but also after the acute phase, they rehabilitate quickly and without too much help."

Question 4.—In the order of their importance, what measures have you found of value in the rehabilitation of your cardiac patients?

Answer: Establishing a proper diagnosis, followed by indicated medical measures were considered to be basic steps in cardiac rehabilitation. After these immediate medical needs were met and the existing emergency subsided, the majority of physicians indicated that they proceeded with a discussion with the patient as to the nature of his illness and the likely degree of disability. This discussion was considered to be the most important of all the measures used in cardiac rehabilitation. To be effective, it was emphasized that this discussion should be completely unhurried.

Dr. James A. Blake of Hopkins, Minn., defined the nature of this discussion and the role of the family physician in cardiac rehabilitation as follows: "This discussion goes on continuously from the moment the diagnosis is made all through treatment, convalescence, and resumption of some type of work. It needs constant supervision of an interested, sympathetic, confident individual, and the general practitioner family physician is particularly needed here. For this reason he should be regarded as a full partner in all stages. This has been no particular problem to general practitioners in Minnesota, for we have full staff privileges in all hospitals, and there is a fine rapport between generalist and specialist." This comment not only defines the nature of this important discussion but eloquently emphasizes the place of the family doctor in cardiac rehabilitation.

Consultation with persons in related fields and use of ancillary agencies was reported by the general practitioners surveyed to have been of limited value. In many areas in which these doctors practice, such facilities are entirely lacking. Ministers were reported to have been the main source of extramedical help to the general practitioners and it was noted that when the patient had the advantage of faith, ministers were of particular value.

The fact that many physicians found such co-professional services as vocational counseling and social service of limited value is illustrated by the comment of Dr. A. J. Franzi of San Francisco; "I regret to say that my experiences with social service and vocational counseling have been unhappy, in that too often I have lost the complete control over the patient's activity and felt that I was becoming an outsider in the care of my patient."

Question 5.—Please comment on your practical experience in the rehabilitation (including perhaps comments on ability to return to work, social and psychological adjustment) of patients with the following cardiovascular diseases:

(*a*) congenital heart disease, (*b*) rheumatic heart disease, (*c*) hypertensive cardiovascular disease, (*d*) coronary artery disease, (*e*) cerebral vascular disease, (*f*) neurocirculatory asthenia, (*g*) iatrogenic heart disease, and (*h*) luetic [syphilitic] heart disease and subacute bacterial endocarditis.

Answer: *a*. Experience with congenital heart disease by the family physician in this survey was limited by the relative infrequency of these disorders and by the specialized nature of both diagnosis and treatment in many of the patients with congenital heart disease. Most of these patients at one time or another are evaluated in the larger medical centers. It was acknowledged that the most dramatic illustrations of cardiac rehabilitation that could be recalled were those from this group that had been successfully rehabilitated after cardiac surgery. The avoidance of problems resulting from over-restriction imposed by parent or doctor on the patients whose lesions were functionally insignificant was considered to be an important principle to be followed in the rehabilitation of the patients with congenital heart disease.

b. In rheumatic heart disease results of cardiac rehabilitation were generally good when valve deformity was not great and when active rheumatic fever was not present. The patients belonging to this group were thought generally to make "a surprisingly good adjustment" and many carry on full activity with no restrictions. The value of surgery in selected cases was stressed, and the importance of meticulous medical management, particularly in the maintenance of an adequate penicillin prophylaxis, was also emphasized for patients in this group.

c. Considerably more pessimism about experience with patients with hypertensive cardiovascular disease was expressed by the general practitioners than by the cardiologists. Despite the use of antihypertensive drugs and the attention paid to the emotional needs of these patients, it was noted that they frequently did not feel well and were prone to discontinue treatment and often to drift from one physician to another.

d. Patients with coronary artery disease constitute the largest group. In general, favorable experience in returning the patients to work after an acute episode was reported. The role of the personal physician in educating the patient as to his potentialities following recovery from myocardial infarction was particularly emphasized. Experience was cited to show that most of these patients were able to return not only to work but to their previous occupation without a great deal of restriction.

proprioceptive receptors by jouncing may be involved, since hypotension has been observed as air currents were blown over the skin of anesthetized patients, or a painless skin incision made in a patient anesthetized by subarachnoid block. Local axon reflexes leading to redistribution of blood may be the factor here. The hypotension associated with change of position and movement demands further study.

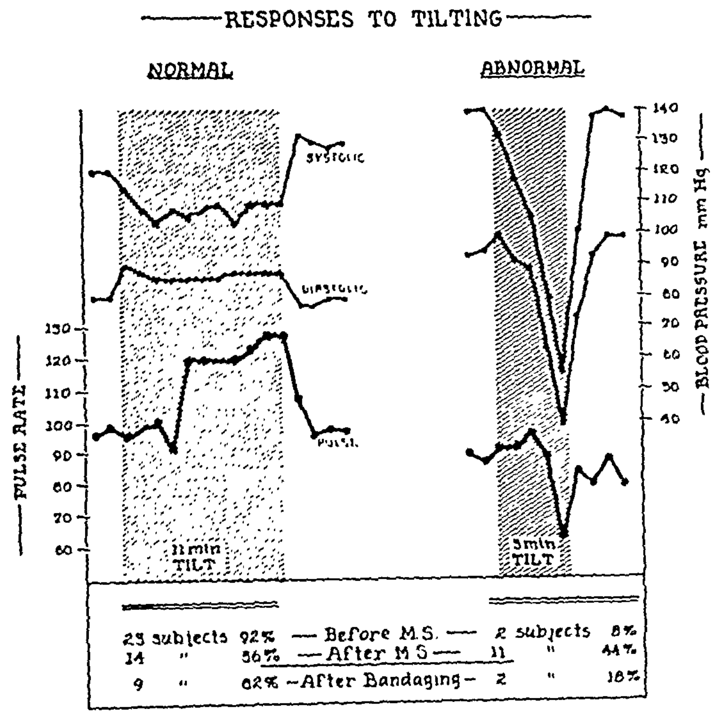

Fig. 1.—Effect of intramuscular administration of morphine sulfate in doses of 16 to 20 mg. on circulatory response to 70-degree head-up tilt in 25 subjects.

2. *Reduction in Level of General Anesthesia.*—As an inhalational drug is eliminated, nonvolatile depressants metabolized, or muscle relaxants detoxified, changes in a patient's circulation take place. "Cyclopropane shock" is a case in point.[2] At the end of an operation with this substance as the anesthetic, hypotension may develop. Reduction of a previously elevated arterial carbon dioxide tension has been implicated. The thesis is that inadequate pulmonary ventilation during anesthesia occurs more frequently than is appreciated. As a result, carbon dioxide accumulates and tends to elevate blood pressure through centrally mediated vasoconstriction. As anesthesia terminates and alveolar ventilation improves, arterial carbon dioxide tension is lowered. With a lessened central stimulation, vasomotor activity decreases and blood pressure falls. A similar sequence of events can follow the administration of any anesthetic, such as the combination of thiopental sodium and a muscle relaxant, which also may cause respiratory depression and respiratory acidosis.

Other changes follow completion of an operation with the patient under general anesthesia. When a closed-system method of administration has been used, removal of the anesthetic is accompanied by reduction in respiratory resistance, reduction in the temperature and humidity of the inspired air, and reduction in the oxygen concentration. Any or all of these could be implicated in the development of hypotension.

3. *Unrecognized or Inadequately Treated Blood Loss.*—Failure to measure and replace obvious blood loss during extensive operations may contribute to immediate postoperative hypotension in a patient. Blood loss may be hidden temporarily after closure of the thoracic or abdominal cavities, even though drains are in place. Obstruction to outflow through these drains can occur, and bleeding is not apparent.

There are certain clinical situations in which prolonged and profound oozing of blood may occur. The lungs, pancreas, prostate, and uterus appear to liberate substances which interfere with coagulation. Operations on these organs may therefore be accompanied by generalized oozing from the operative site. Transfusions of large volumes of banked whole blood may also be followed by oozing, which is difficult to control. The mechanism of this is still uncertain, but it may include the effects of excess amounts of citrate and heparin-like substances, reduced levels of accelerator globulin, platelets, and fibrinogen, and fibrinolysis. When massive transfusion is required, the anesthetist must be alert to the possibility of continued, generalized oozing. Use of fresh frozen plasma or fresh (one to three hours) whole blood has proved helpful in improving clot formation, as has the intravenous injection of 10% calcium gluconate.

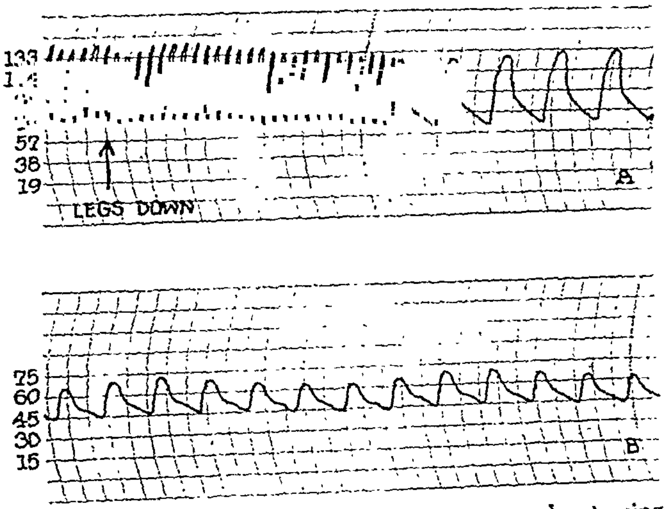

Fig. 2.—Continuous intra-arterial pressure pulse tracings in a 71-year-old patient after operation performed in lithotomy position. Time between charts A and B is two minutes. Pressures are in millimeters of mercury.

4. *Emboli.*—Hypotension following embolization has been mentioned. Although uncommon, pulmonary embolism may be the cause of sudden hypotension at the end of an operation. We have been bewildered by several such cases until postmortem findings revealed the cause. Cerebral emboli follow-

ing mitral commissurotomy commonly cause intractable arterial hypotension. Other emboli may consist of fat or air.

Respiratory Sequelae

Hypoxia is a constant threat in the immediate postoperative period. Studies of Comroe and Botelho have indicated the unreliability of cyanosis in the clinical recognition of arterial anoxemia.[3] One must guard against the possibility of unrecognized hypoxia, since the signs and symptoms may be elusive. A patient should not be moved from the operating room until the anesthetist is certain about the adequacy of pulmonary ventilation and oxygenation. The following factors are the primary causes for alarm in inadequacy of respiration.

1. *Soft-Tissue Respiratory Obstruction.*—Partial or complete respiratory obstruction is a common phenomenon in the immediate postoperative period. In addition to the observance of thoracic movement, the anesthetist should place the palm of his hand over the patient's mouth and nose so as to appreciate the exhalation of air with each breath. The adage that noisy breathing is obstructed breathing is valid, and stertor calls attention to the abnormality. With complete obstruction, however, one must rely on the detection of respiratory muscle activity and the absence of movement of air against the sensing hand. Patients must be transported in a manner designed to forestall airway obstruction. The lateral position is safer than the supine in this regard. We have observed death from undetected respiratory obstruction during transportation of anesthetized patients.

2. *Vomiting.*—Vomiting at the conclusion of an operation while the patient is still on the operating table is welcomed by many anesthetists, since it may eliminate material which, if retained, might cause continued nausea and retching. So long as gastric contents are not aspirated into the respiratory tract, no harm is done. A high index of suspicion by the anesthetist affords the greatest protection for the patient. Anyone who has been anesthetized may vomit. Although swallowing often precedes vomiting, occasionally fluid may well up into the pharynx without prior warning. All these factors must be remembered as the operation comes to an end.

The 10-to-15-degree head-down tilt recommended by many has little value, for, if the mouth or pharynx contains vomitus at the time of an inspiration, inhalation of the material is likely. Nor is excessive stimulation of the pharynx with a suction catheter recommended. This can often be the cause of further gagging and vomiting. A properly functioning suction apparatus must be at hand, but it should be used judiciously. Similarly, an oral airway should not be permitted to remain in place too long, for its presence can stimulate vomiting as anesthesia lightens. When vomiting is anticipated, the head should be turned to the side.

If gastric contents enter the respiratory tract, we believe that repeated irrigation with 10 to 20 ml. of sterile saline solution introduced through an endotracheal tube is of value. This dilutes irritant acids or alkalies. The lungs can quickly absorb large quantities of saline solution. Unless particulate matter is aspirated, we do not believe that bronchoscopic aspiration is superior to the technique just described.

3. *Removal of Endotracheal Tube.*—If an endotracheal tube is withdrawn during a light plane of anesthesia, this stimulus may result in closure of the glottis. Laryngospasm can be marked and troublesome, particularly in infants and children. With their high metabolic rate and small residual volume of oxygen, hypoxia can develop quickly in these patients. This complication can be minimized by gentleness during extubation, extubation during deeper planes of anesthesia, or extubation after the patient awakens. Once laryngospasm has developed, frantic efforts to inflate the lungs with oxygen may cause instead inflation of the stomach, elevation of the diaphragm, and the likelihood of vomiting. Steady but not excessive pressure to a breathing bag containing oxygen is preferable and is usually sufficient. The intravenous injection of succinylcholine chloride to relax the striated muscle of the larynx, followed by manual pulmonary ventilation, may be needed. Should neither method be available, insertion of a large-bore needle (14 gauge) into the trachea below the cricoid cartilage may be lifesaving. Through this needle one can inject air with a large syringe or give oxygen via a rubber tube.

Removal of an endotracheal tube may also reveal for the first time that vocal cord paralysis has occurred during operation. After operation on the thyroid gland signs of respiratory difficulty may indicate such damage. Inspection of the vocal cords will reveal absence of movement with respiration. The surgical team should be alerted to the possible need for tracheostomy.

4. *Diffusion Anoxia.*—At the end of an operation with the patient under nitrous oxide anesthesia, the pulmonary alveoli and blood contain nitrous oxide and relatively small amounts of nitrogen. With the first inhalation of room air, nitrogen begins to diffuse into the blood and nitrous oxide into the alveoli. Because of its greater solubility in blood, the volume of nitrous oxide available for diffusion outward into the lung is considerably greater than the volume of nitrogen that replaces it in blood. Hence, there is a net gain in the gas volume of the lung. With the trachea patent, the lung does not expand but merely expels the mixture of gases and with it some oxygen. The residual oxygen is diluted and the partial pressure decreased by the outward dif-

fusion of nitrous oxide.[4] Even a few breaths of room air during inhalation of 80% nitrous oxide, as for replacement of a mask or aspiration of the endotracheal tube, can result in a decreased arterial blood oxygen saturation. Prevention of this complication consists in provision of a high oxygen concentration as nitrous oxide is being eliminated.

5. *Pneumothorax.*—We have observed pneumothorax following brachial plexus or intercostal nerve block, after rupture of an emphysematous bleb, in association with mediastinal emphysema, during dissections in the neck, when air had not been adequately withdrawn after thoracotomy, or during operations beneath the diaphragm. Examination of the chest must be carried out to identify this abnormality, for, should a tension pneumothorax be present, prompt aspiration of the air is essential.

6. *Pulmonary Atelectasis.*—Collapse of parts of the lungs behind bronchial obstruction must also be considered. This can occur with the patient under general anesthesia and remain undiagnosed, because the inhalation of a high concentration of oxygen prevents the recognition of hypoxia. When room air is breathed at the conclusion of the operation, the effects of atelectasis are unmasked. Again, physical diagnosis looms large in the recognition of this entity.

7. *Respiratory Depression from Muscle Relaxants.*—At the completion of an operation with the patient under an anesthesia which involves use of one of the muscle relaxants, respiratory inadequacy may prevail. These drugs reduce respiratory minute volume as a result of the neuromuscular blocking action upon intercostal muscles and diaphragm. Effects upon central regulatory respiration mechanisms may also prevail. If these pharmacological actions have not disappeared completely by the end of the operation, pulmonary ventilation must be assisted, lest hypoxia supervene. This undesirable sequela has occurred with all the muscle relaxants, even the short-acting members of the group.

8. *Restrictive or Obstructive Dressings.*—Insufficient alveolar ventilation may be caused by the application of excessively tight surgical dressings after such operations as radical mastectomy. Respiratory obstruction may also be caused by dressings or plaster casts applied about the head and neck. Surgeons must be warned of this possibility as the wound is being covered.

Immediate Postoperative Pain and Restlessness

As surgical patients emerge from general anesthesia, many are restless and complain of pain or discomfort. Restlessness may be of such severity as to deserve the term "delirium." Under these latter conditions restraints are essential, control of the wildly excited patient is difficult, and therapy may be urgently needed. The cause of this restlessness is uncertain. Incisional pain is a factor. Muscle strain and fatigue caused by awkward positions appear to be contributory. Repressed fears and anxiety play a role. A distended urinary bladder has been implicated. The pharmacological basis for the restlessness and agitation may be the same as that responsible for the excitement, struggling, and occasional delirium seen during the induction of inhalation anesthesia. The two phases might be likened to mirror images, the one occurring at the beginning and the other at the end of general anesthesia. Release of cortical inhibitions and loss of control over one's emotions and behavior are evident in both instances.

Regardless of the etiological background, one therapeutic approach is the administration of narcotic analgesics, either by vein or intramuscularly. Smaller doses of the drug are required under these circumstances than if the patient has fully awakened and is complaining primarily of pain. If restlessness is manifest before consciousness has returned, the analgesics often return the subject toward the anesthetized state. An intravenous injection is particularly likely to have this effect. This was described by Claude Bernard a century ago.[5]

Prevention of postoperative excitement is not always possible, but some measures appear to offer some success. Those patients who are excessively disturbed emotionally prior to operation or who have evident psychological difficulties should receive additional preanesthetic sedation. The administration of scopolamine is best omitted in the case of these individuals, for its use, particularly in combination with a barbiturate, has been associated with an increased incidence of emergence excitement in our clinic. A small dose of a narcotic analgesic, injected intramuscularly prior to the conclusion of anesthetization, seems to result in smoother awakening. The patient's circulatory balance should be judged adequate before such a drug is given.

Treatment of the agitated individual includes a number of possibilities. If the patient has been in one position upon the operating table for a long period of time, this position should be changed in the bed or the litter. If pain is a factor, a small dose of narcotic (morphine, 5 mg., meperidine [Demerol] hydrochloride, 15 to 25 mg., or anileridine [Leritine], 10 mg., administered intravenously or intramuscularly) is indicated. Chlorpromazine (Thorazine) hydrochloride, in doses of 2.5 to 5.0 mg., or apomorphine hydrochloride, 1.0 to 1.5 mg. in 5 ml. of saline solution, given slowly by vein is often effective. A final method of controlling postoperative excitement is the intravenous administration of a cerebral cortical stimulant, such as caffeine and sodium benzoate or nikethamide.

These medications are not without hazard. All may cause hypotension, retching, and vomiting. The hypotension after the injection of chlorpromazine and less frequently after the administration of a narcotic may be profound. Fortunately, as the anesthetics are eliminated and self-control is reestablished, agitation lessens, and the patient becomes quiet. Time therefore is on one's side. The experience, however, may be a traumatic one, not only for the patient but for his attendants as well.

Summary

The period between the end of an operation and admission to a recovery room poses distinct hazards to the surgical patient. Hypotension, inadequacy of respiration, and disturbing excitation are the primary causes for alarm. The etiological and therapeutic aspects of these three conditions have been considered.

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PARAVERTEBRAL ALCOHOL BLOCK OF LUMBAR SYMPATHETIC NERVES

EVALUATION BY SWEATING TESTS IN THREE HUNDRED FIFTY-ONE PATIENTS

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Paravertebral injection of alcohol for the purpose of blocking lumbar sympathetic ganglions was carried out in 351 patients with peripheral occlusive vascular disease (97% of cases), popliteal aneurysms, causalgia, or hyperhidrosis. The total number of injections was 454, since some were bilateral and others were repeated. Premedication and local anesthesia were used to facilitate injection, and 4 cc. of absolute ethyl alcohol was given in each case. The extent of the resulting sympathetic blocking was determined by a sweating test. This consisted of painting an alcoholic solution of cobaltous chloride on the dry skin and noting the change from deep blue to bright pink in those areas where sweating could still be induced. Adequate sympathetic blocking was achieved in 65% of all treated patients. Side-effects included neuralgia, which occurred in 10 patients and which was controlled by physical therapy. The value of alcohol block in cases of intermittent claudication was not demonstrated, but other evidence of improved circulation was obtained. This procedure is a substitute for lumbar sympathectomy and has given symptomatic relief in cases where operation was refused or contraindications for operation existed.

The first injection of alcohol into the trigeminal nerves was carried out by Schlösser [1] in 1903 as an effective treatment of trigeminal neuralgia. In the following years Ostwalt,[2] in Paris, reported some modifications of this treatment. However, he gave full credit to Schlösser for the original technique, which had been demonstrated to him during a visit to Schlösser's clinic in 1904. Lévy and Bandouin in 1906 published their modification of the techniques of Schlösser and Ostwalt.

In 1923 Läwen,[3] in Germany, inspired by Bergmann, Kappis, Danielopolu, and Hristide, injected procaine hydrochloride (Novocain) paravertebrally into the sympathetic nervous system for anesthetic, diagnostic, and therapeutic purposes in abdominal disorders and in cardiac pain. At first Läwen and his collaborators had little success in the treatment of patients with angina pectoris, but in 1924 Brunn and Mandl [4] reported the successful treatment of several patients by means of the paravertebral injection of procaine into the sympathetic nerves. To prolong the effect, Brunn suggested the use of alcohol as a blocking agent. In this country Swetlow reported at a meeting of the New York Neurological Society in 1925 the

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first case of congenital syphilitic heart disease in which precordial pain was treated effectively with a paravertebral injection of alcohol. In 1926 Swetlow[5] reported several cases in which angina pectoris was treated satisfactorily with a paravertebral alcohol block of the thoracic sympathetic nerves.

During the next few years the Whites[6] and others used both procaine hydrochloride and alcohol in the treatment of angina pectoris. The first paravertebral injection of alcohol into the lumbar sympathetic nerves was reported in 1930 by Stern[7] in three cases of thromboangiitis obliterans (Buerger's disease); he observed definite increase of the circulation in the extremity after the block. In 1931 Flothow[8] preceded the alcohol block by a diagnostic injection of procaine and reported excellent results in 50 patients with various peripheral vascular deficiencies. Reichert gave paravertebral injections of alcohol into the lumbar sympathetic nerves to relieve intermittent claudication and observed "striking results" in 25 patients.

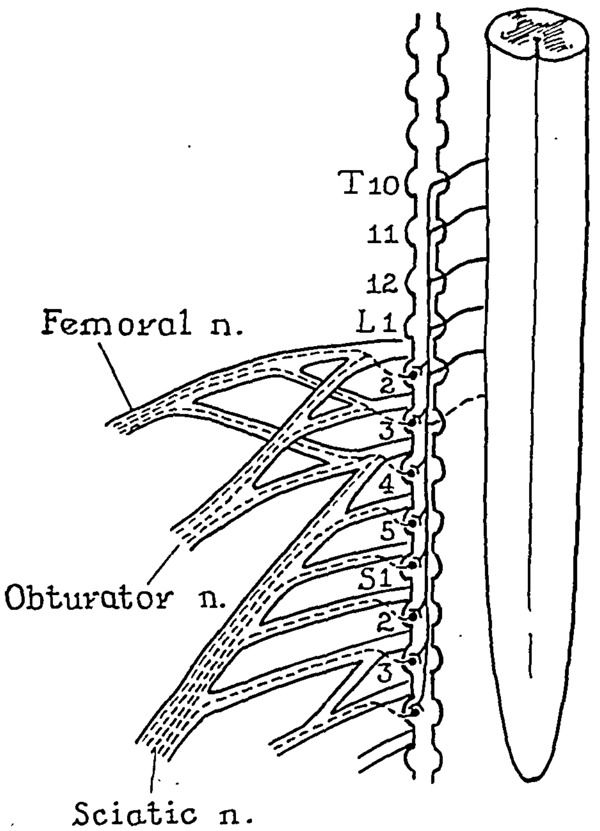

Fig. 1.—Sympathetic innervation of lower extremity. Preganglionic fibers originate from 10th thoracic segment to 2nd or 3rd lumbar segment of spinal cord. Postganglionic fibers arise segmentally in paravertebral ganglions and are distributed segmentally to nerve roots of femoral, obturator, and sciatic nerves.

In 1926 Brown[9] reported an absence of sweating from the knees down after bilateral removal of the second, third, and fourth lumbar sympathetic ganglions and the included sympathetic trunk. Since that time, absence of sweating has been used to measure the completeness of sympathetic denervation. A simple method for determining the lack of sweating was introduced by one of us[10] in 1935.

During the intervening years various reports have been made on technique, complications, success, and duration of paravertebral alcohol blocks on a limited number of patients. Because many sweating tests have been carried out on those of our patients receiving alcohol injections, the present study of 351 cases was made to determine the completeness and the duration of the denervation and to determine the frequency of complications associated with these blocks.

Anatomy

The sympathetic nerves to the lower extremities arise as follows (fig. 1). The preganglionic nerve cells are in the lateral gray masses in the spinal cord, from approximately the 10th thoracic segment to the 2nd or 3rd lumbar segment. The preganglionic fibers leave the spinal cord segmentally by way of the anterior root and are then carried by white rami to the paravertebral ganglions. A synapse occurs in the paravertebral ganglions at the level of the emergence of the preganglionic fibers from the vertebral canal in the paravertebral lumbar chain of ganglions or above or below it.

The postganglionic cell bodies lie in the paravertebral ganglions, and fibers leave the ganglions via the gray ramus to join the somatic nerves. The somatic and sympathetic nerves supply the lower extremities by the obturator, femoral, and sciatic nerves. The paravertebral ganglions in the lumbar and sacral regions are somewhat variable in number but, in general, lie close to the somatic nerves which they supply with postganglionic sympathetic fibers.

Inasmuch as there is no sympathetic outflow from the spinal cord below the second or the third lumbar vertebra, the sympathetic components of the sciatic nerve are readily interrupted by blocking the second and third lumbar ganglions. The obturator and femoral nerves, however, are also supplied by the first lumbar somatic nerve root and the adjacent sympathetic ganglion. It is necessary, therefore, to interrupt the first lumbar sympathetic ganglion, along with the second and third ganglions, to produce adequate sympathetic denervation of the entire leg.

Technique of Paravertebral Alcohol Block

The therapeutic blocks in our cases were not the endeavor of only one person but were the combined effort of all members of the Section of Anesthesiology. Before paravertebral block was scheduled, the patient was seen in consultation by a member of the Section of Neurologic Surgery to determine whether surgical or chemical interruption should be performed.

The technique used by the various anesthesiologists for insertion of the needle has been based on the technique of Lundy. In the last few years the one-needle technique has been used in most cases. This single needle is placed at the level of the second lumbar vertebra. From the results obtained, the placement of the needle at this level has been as effective as the placement of the needles at the level of the second and third and even the fourth lumbar vertebrae.

The patient is told to take neither food nor drink after 6 p. m. on the day before administration of the block. Preoperative medication, if given, consists of a short-acting barbiturate, atropine and morphine, or meperidine (Demerol) hydrochloride. Prior to the patient's arrival in the operating room, a table or cart is prepared with an x-ray cassette holder in place, so that roentgenograms can be readily taken without moving the patient once the needle or needles are in place. The procedure is carefully explained to the patient, and the possibility of complete or partial failure of the block and the remote, but definite, possibility of alcohol neuritis are pointed out.

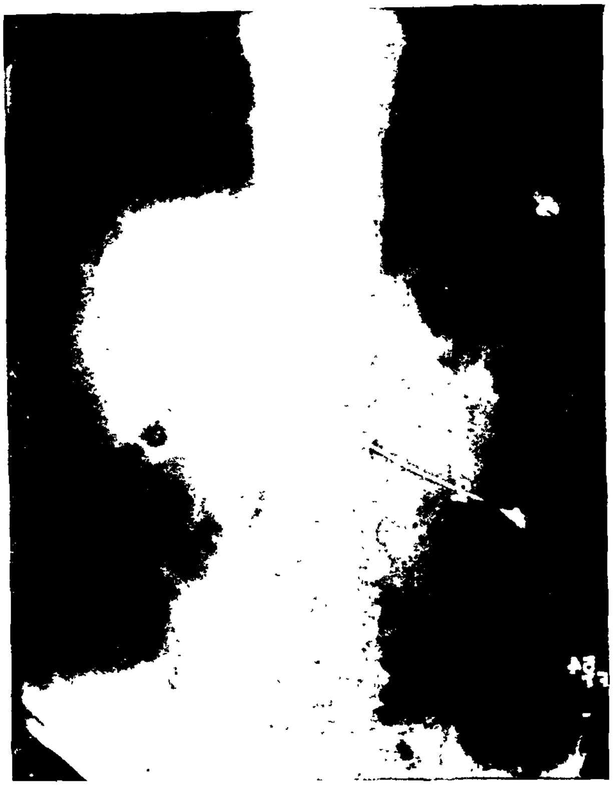

Fig. 2.—Anteroposterior roentgenogram, showing placement of needle at level of second lumbar vertebra. Level of needle at entrance into skin approximately opposite spine of second lumbar vertebra. Note angulation of needle cephalad, so that its tip lies in about midway between top and bottom of vertebra. Lead no. 2 identifies at what level anesthesiologist believed needle was placed. If needle was ill-placed, another needle with different lead marker would be utilized, to properly differentiate two films.

With the patient in a prone position on the cart, the spine of the second lumbar vertebra is palpated. At this level and approximately 4 to 5 cm. from the midline a wheal is made with a local anesthetic agent, and the local anesthetic agent is then injected down to the level of the transverse process. A 120-mm. needle is inserted and slightly angulated cephalad, so that it is advanced along the lateral border of the second lumbar vertebra until it comes to rest at, or slightly below (anterior to), the anterolateral border. Anteroposterior and lateral roentgenograms are then taken to determine the exact position of the needle (fig. 2 and 3).[11] If the needle is well placed, no further roentgenograms are needed. If the needle is ill-placed, it is manipulated or another needle is inserted, and another roentgenogram is made.

The patient is then given intravenously a small amount of thiopental (Pentothal) sodium for analgesia, and 4 cc. of absolute alcohol is injected through the lumbar needle, with frequent aspiration via the needle to make sure that there is no intravascular injection. If a bilateral block is to be done, then 4 cc. of alcohol is injected on each side. The patient is allowed to awaken and is returned to his room. Within 24 to 48 hours after the block, a sweating test is carried out to determine the efficacy of the block.

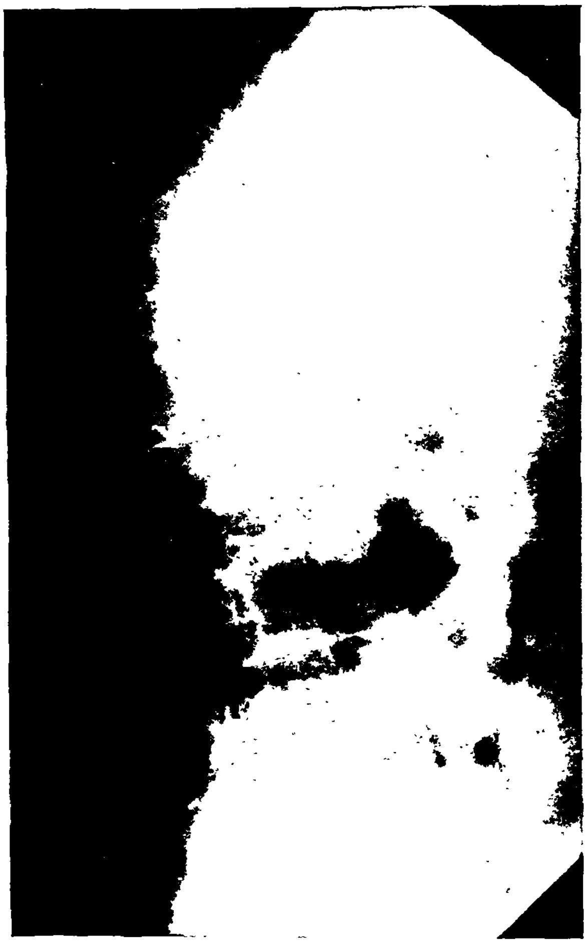

Fig. 3.—Lateral roentgenogram, showing that position of needle in depth relationship is correct. When it is correctly placed, point of needle is just ventral to anterolateral surface of vertebra. Sweating pattern for patient was excellent.

Sweating Test

The sweat glands are innervated by the thoracolumbar or sympathetic division of the autonomic nervous system. Sweating induced by heating the body occurs as a reflex mediated through the central nervous system and the sympathetic nerve fibers to the sweat glands.[12] Segmental regions of anhidrosis in man after sympathectomy or chemical destruction of the sympathetic rami and ganglions indicate the completeness of the sympathetic interruption.

The method used to determine the presence or the absence of sweating is a colorimetric one based on the chemical fact that, when cobaltous chloride in a saturated alcohol solution is painted in stripes on the dry skin, it has a deep blue color but turns to bright pink on the addition of water or sweat. The solution on the skin dries readily if it is put on in small quantity. To produce sweating, an aluminum heat cabinet, containing a series of incandescent bulbs and large enough to cover the entire body except the head, is placed over the patient. A temperature of 130 F is maintained until sweating is induced, usually for 10 to 12 minutes. If sweating is delayed, a hot drink will hasten its appearance. The heat cabinet then is removed, and the portions of skin to which the solution has been applied are observed immediately. Where sweating has occurred, the dots or stripes of solution are bright pink. In places where varying degrees of sweating can be observed, the transition may be noted with considerable accuracy by observing the change in color of the stripes. On humid days sufficient moisture may be present in the air to change the color in the solution, but it is never the deep pink observed in the presence of sweating. Furthermore, the heat cabinet eliminates the factor of atmospheric moisture.

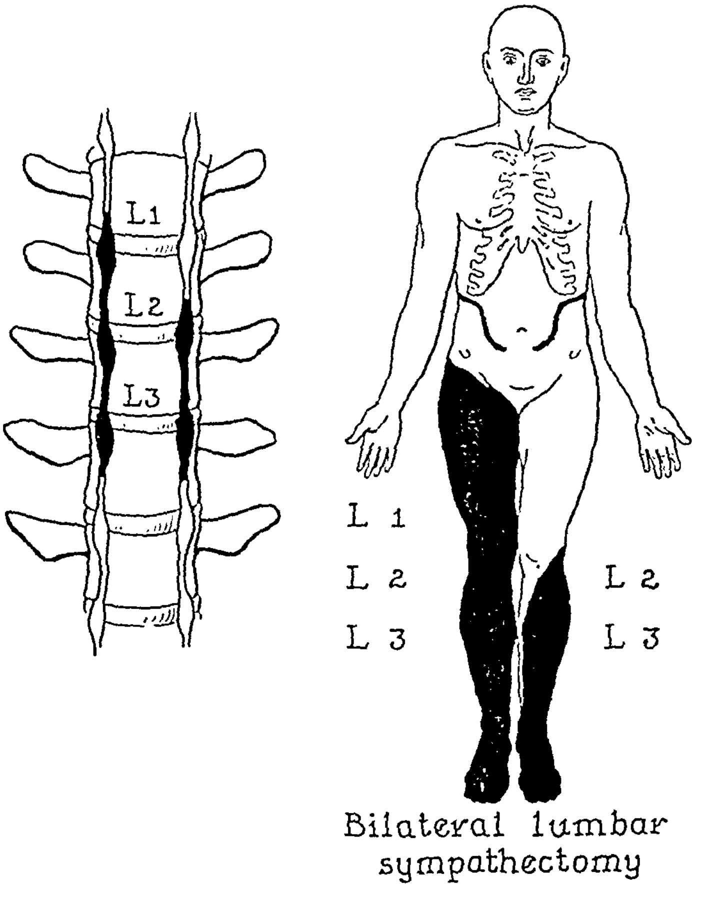

Fig. 4.—Areas of anhidrosis established by removal or alcohol destruction of first, second, and third lumbar sympathetic ganglions or second and third lumbar sympathetic ganglions.

Results as Indicated by Sweating Test

The results of the paravertebral injection of alcohol into the lumbar sympathetic nerves, which we are reporting in our 351 cases, were based on the anhidrosis found after operation. Three patterns of anhidrosis and, therefore, three types of results were found: (1) anhidrosis such as is caused by complete block of the first, second, and third lumbar sympathetic ganglions; (2) anhidrosis such as is caused by complete block of the second and third lumbar sympathetic ganglions; and (3) completely unsatisfactory results characterized by spotty anhidrosis or absence of anhidrosis in regions corresponding to the first, second, and third lumbar segments (fig. 4 and 5).

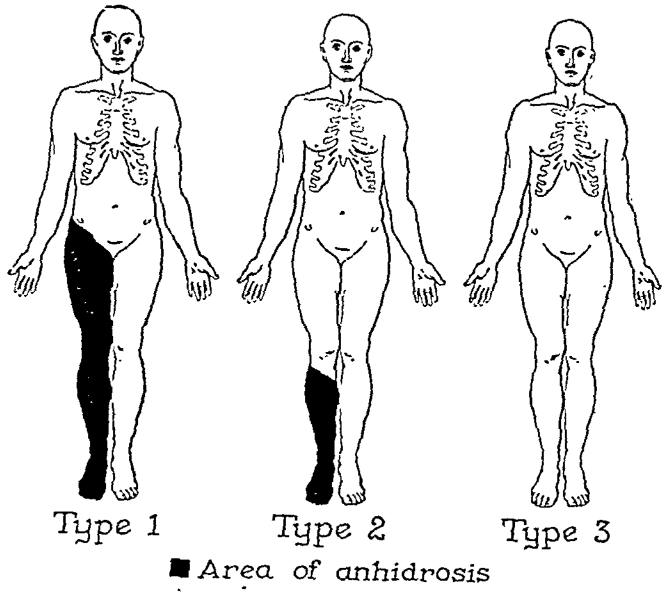

Fig. 5.—Three types of sweating pattern after paravertebral injection of alcohol into lumbar sympathetic nerves. Type 1 corresponds to blocking of first, second, and third lumbar sympathetic ganglions. Type 2 corresponds to blocking of second and third lumbar sympathetic ganglions. In type 3 no blocking effect was obtained.

Results are listed in tables 1 to 5, the patients being divided into various groups. In table 1 results are given for 280 patients who had unilateral alcohol blocks and in tables 2 and 3 for the patients with bilateral blocks. In 32 of the patients who had bilateral blocks, a symmetrical pattern of anhidrosis was obtained (table 2) in the two extremities, and in 22 patients, it was not symmetrical (table 3). Results on 17 pa-

TABLE 1.—*Unilateral Paravertebral Alcohol Blocks of Lumbar Sympathetic Ganglions*

Anhidrosis Indicating Ganglions Blocked	Patients No.	Patients %	Total Blocks	Repeated Blocks
Type 1 (L-1, L-2, L-3)	103	37.8	110	7 on 7 patients
Type 2 (L-2, L-3)	65	23.2	68	3 on 2 patients
Type 3 (unsatisfactory)	112	40.0	136	24 on 20 patients
Total	280	100.0	314	34 on 29 patients

ents who had long-lasting sympathetic denervation
p to five years) as proved by the sweating tests
e given in table 4. The results of all paravertebral
cohol blocks of the lumbar sympathetic ganglions,
erformed during the past five years at the Mayo
linic, are given in table 5.

TABLE 2.—*Bilateral Paravertebral Alcohol Blocks of Lumbar Sympathetic Ganglions*

Anhidrosis Indicating Ganglions Blocked	Patients		Total Blocks	Repeated Blocks
	No.	%		
pe 1 (L-1, L-2, L-3)	13	40.6	29	3 on 2 Patients
pe 2 (L-2, L-3)	7	21.9	16	2 on 2 patients
pe 3 (unsatisfactory)	12	37.5	24	None
otal	32	100.0	69	5 on 4 patients

Sixty-five per cent of the patients obtained either
omplete anhidrosis of the lower extremity (type 1)
clinically satisfactory anhidrosis (type 2), espe-
ally in thromboangiitis obliterans which affects most
the smaller peripheral arteries. The remaining 35%
d unsatisfactory results from blocks.

Comment on Results

The lumbar sympathetic ganglions vary in number
d location. Ray and Console[13] pointed out that
turn of sympathetic activity after sympathectomy for
eripheral vascular disease and hypertension is not
sually due to regeneration of the sympathetic nerves;
ther it is due to additional sympathetic pathways
hich do not pass through any part of the sympathetic
hain. Roth and Craig[14] confirmed this by means of
e sweating test. In their series lumbar sympathec-
omy was performed 283 times on 183 patients with
eripheral vascular disease. The expected complete
enervation from the toes to the inguinal region oc-
urred after only 7.4% of the lumbar sympathectomies.
n 21.6% of the patients the region of anhidrosis ex-
ended from the midthigh to the toes, in 40.6% from
e knee to the toes, and in 30.4% from below the knee
the toes.

ABLE 3.—*Bilateral Miscellaneous Paravertebral Alcohol Blocks of Lumbar Sympathetic Ganglions*

Anhidrosis Indicating Ganglions Blocked	Patients		Total Blocks	Repeated Blocks
	No.	%		
ype 1, unilateral ype 2, unilateral	19	86.4	37	None
ype 2, unilateral ype 3, unilateral	3	13.6	9	3 on 2 patients
Total	22	100.0	46	3 on 2 patients

Hollinshead[15] anastomosed the cephalic end of the
ervical sympathetic trunk, after removal of the supe-
or ganglion, with the distal end of the median or the
lnar nerve of the cat. He demonstrated that the re-
enerating sympathetic fibers failed to reach the
veat glands, the return of sweating being due to an
growth of fibers from the intact radial nerve, and
ggested that there is a limitation in the length to
hich preganglionic fibers can grow. No evidence was
obtained that preganglionic fibers might replace postganglionic fibers to produce anomalous sweating in man after removal of the sympathetic chain.

Alexander and associates[16] and Lowenberg and Morton demonstrated by dissection of cadavers the absence of the first lumbar ganglion. Ganglion cell aggregates were found as extraganglions either adjacent to the ventral nerve roots or embedded in the ventral spinal nerve roots at the site of origin of a white communicating ramus and in its proximal portion in the first and second lumbar segments only. The most frequently found ganglion at its expected level is the second lumbar ganglion. Gruss,[17] as early as 1932, observed ganglions in the white and gray communicating rami in man. It can be believed that these ganglion cells are synaptically connected with preganglionic fibers, thus forming conduction pathways. Sweating patterns of types 2 and 3 were believed to result from these conductive sympathetic pathways, anatomic variations in location of the ganglions, or changes in the technique.

TABLE 4.—*Long-Lasting Paravertebral Alcohol Blocks of Lumbar Sympathetic Ganglions*

Anhidrosis Indicating Ganglions Blocked	Patients		Total Blocks	Repeated Blocks
	No.	%		
Type 1 (L-1, L-2, L-3)	10	58.8	13	3 on 3 patients
Type 2 (L-2, L-3)	7	41.2	12	5 on 3 patients
Total	17	100.0	25	8 on 6 patients

Indications for Paravertebral Lumbar Injection of Alcohol

The paravertebral injection of absolute ethyl alcohol, or the so-called chemical sympathectomy, will not replace surgical sympathectomy. The injection can be only a substitute for operation. However, if the alcohol infiltrates the sympathetic ganglions, the destruction can give a comparable result to that of ganglionectomy.

The decision to perform an alcohol block is usually made when surgical sympathectomy is contraindicated because of the patient's general condition or when the operation is refused. Emergency paravertebral alcohol block of the lumbar sympathetic ganglions is indicated in some cases of acute arterial occlusion in the lower extremities owing to thrombosis or embolism, either alone or as an adjunct to embolectomy. It also may be of benefit in acute frostbite with involvement of the feet and lower part of the legs. However, block of appropriate sympathetic ganglions with alcohol

TABLE 5.—*Total Figures of Unilateral and Bilateral Paravertebral Alcohol Blocks of Lumbar Sympathetic Ganglions*

Anhidrosis Indicating Ganglions Blocked	Patients		Blocks
	No.	%	
Type 1 (L-1, L-2, L-3)	145	41.3	189
Type 2 (L-2, L-3)	82	23.4	105
Type 3 (unsatisfactory)	124	35.3	160
Total	351	100.0	454

should be avoided if the patient has prothrombin deficiency from bishydroxycoumarin (Dicumarol) or allied drugs or prolonged coagulation time from heparin because of the danger of serious retroperitoneal bleeding.

The circulation in various arterial diseases can be improved in some instances by paravertebral blocking of the lumbar sympathetic ganglions, but we have not been impressed with the value of this procedure in cases of intermittent claudication. Of our 351 patients who had paravertebral injections of alcohol into the lumbar sympathetic ganglions, 97% had peripheral occlusive vascular disease (thromboangiitis obliterans or arteriosclerosis obliterans), and the rest (3%) had popliteal aneurysm, causalgia, and hyperhidrosis. The average age of the treated patients was 62 years; 74% of these patients were men.

Complications

Various complications of the paravertebral injection of alcohol, such as Brown-Séquard paralysis, regional neuritis, and neuralgia, have been observed. Review of the literature has revealed that neuritis developed after the paravertebral injection of alcohol in 10% of patients. It is obvious this complication occurs more frequently after blocking of the thoracic sympathetic ganglions and rami than of the lumbar ganglions and rami. The explanation is found in the close anatomic relationship between the sympathetic chain and the somatic nerves in the thoracic area. If paravertebral alcohol block of the thoracic sympathetic nerves is to be successful, the alcohol has to be placed close to the pleural surface into the sympathetic ganglions, and it is likely to reach the intercostal nerve. However, in the lumbar region, tissue and fat separate the sympathetic ganglions from the regional somatic nerves and prevent any immediate contact of these somatic nerves with the blocking agent. Should the alcohol, because of faulty technique or abnormal relationship of the sympathetic trunk with the somatic nerves, reach the latter, neuralgia or neuritis is likely to develop. The somatic nerve is paralyzed at first, but the anesthesia may disappear soon after the alcohol injection. Dysesthesia of the chest wall usually develops within a month. Lévy and Moore in their studies of the injection of alcohol into the thoracic sympathetic nerves reported intercostal neuritis of varying severity in 38 of their 45 patients (84%) and increased oral temperature, ranging from 99 to 104 F (37.2 to 40 C), for as long as four days after the block in 25 patients.

In our series of 351 patients with 454 paravertebral alcohol blocks of the lumbar sympathetic nerves, we did not observe any significant changes in oral temperature after the injection. Ten patients (3%) complained of mild pain at the site of injection, with extension into the buttocks or occasionally into the posterior aspect of the thigh. All these patients were given physical therapy, such as diathermy and massage; some were treated for as long as three weeks. The neuritis or neuralgia could be controlled easil these measures, and no other complications were served. One patient complained of mild back six months after the alcohol block. All the ot were dismissed and had no significant complaints erable to the injection of alcohol. In our opinion cohol block under these circumstances is justifi

Summary

The effect of the paravertebral injection of alco into the lumbar sympathetic ganglions and rami studied in 351 patients by means of the sweating Adequate sympathetic blocking with alcohol achieved in 65% of all treated patients. Neuralgia curred in 10 patients (3%) after the injection; was controlled by physical therapy. Absolute ethyl cohol is primarily used as a blocking agent at Mayo Clinic.

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MILITARY MEDICINE—A SPECIALTY AND A CAREER

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There are two objectives to this paper. The first is to depict military medicine as a specialty, capable of being well defined as such, with a special body of knowledge, a special discipline of practice, special problems, and special solutions. This is done with the complete appreciation of the fact that within the scope of the military services today there is room, indeed there is imperative necessity, for all the recognized specialties as they exist in the civilian practice of medicine. But with this qualification plainly made, I believe that the concept of military medicine as a specialty is a sound one and its acceptance desirable.

The second objective is to demonstrate the advantages and opportunities for young doctors in this field. It is fondly hoped that some may thereby be persuaded to embrace this specialty as a career. Surely only when there is a large, dedicated, well-trained corps of career officers in this service can there be available the sort of medical care the armed forces expect and deserve. No more important contribution can be made to national security than the assurance of a healthy, well-adjusted, and happy defense force; and to this happy state, good medical care contributes greatly.

In a unique way the history of military medicine is the history of medicine itself. And, in fact, military medicine has made great contributions to medicine as a whole. One needs only to think of the treatment of wounds, the ligation of arteries, and the management of burns to realize the debt medicine as a whole owes to military medicine. Then, too, while it is recognized that great military operations on the modern scale are possible only because of the discoveries of medicine in the fields of hygiene and preventive medicine, it is precisely in these fields that the military has made great and significant contributions, such as control of yellow fever and enteric disease, the conquest of scurvy, and the elimination of syphilis, to name only a few. And in modern times the management of injuries due to toxic gases and, more recently, to radiation injury has depended entirely on military sources. To list all of these contributions is for another more ambitious paper than this one. It is probably fair to say that the contributions of military surgeons to traumatic surgery, public health and preventive medicine, mass psychological problems, and nutrition are far ahead of what could reasonably be expected from the number of men involved. It does indicate, however, the pride the military surgeon can take in his career, and its appreciation should give to military medicine the prestige it deserves.

> *One needs only to think of the treatment of wounds, the ligation of arteries, and the management of burns to realize the debt medicine as a whole owes to military medicine. Great military campaigns on the modern scale are possible only because of the discoveries of medicine in the fields of hygiene and preventive medicine, to which military surgeons have made great and significant contributions, such as control of yellow fever and enteric disease and the conquest of scurvy, to name only a few. In modern times the management of injuries due to toxic gases and, more recently, to radiation has depended entirely on military sources. The recognition of these special services is important to the acceptance of the military surgeon as a specialist.*

Chairman's address, read before the Section on Military Medicine at the 106th Annual Meeting of the American Medical Association, New York, June 4, 1957.

Military Medicine as a Specialty

To make the point that military medicine is a specialty and that it should be recognized as such requires that certain criteria be met. It must be shown that the alleged specialty deals with a special class of people, that the problems are of a special sort and call for special solution, and that special training and qualifications are needed in its practice. This demonstration will be attempted. In general the personnel coming under the care of the military surgeon (dependent care is another thing) are young, healthy adults, selected because they are free from disease and physical defects. They are being trained or are engaged in a special activity, namely, waging war. It is possible, without presuming to be comprehensive, to list certain special problems which arise from this situation.

Physical Standards.—The military has the opportunity, nay the obligation, to survey men and women on a vast scale as to their physical fitness and freedom from disease. The setting of standards of physical fitness and the devising of methods for physical examination and for the evaluation of findings is a special military problem—and one to which the military have made great contributions but have by no means solved. With the inclusion of special tests for aptitude and for mental stability, which are recent additions, great contributions can be made to civilian welfare by this form of military medicine.

Preventive Medicine.—The problem of preventive medicine in the military scene is certainly a special one, special in its manifestations, dealing as it does with men under special conditions of housing, transport, and exposure, but also special in its vital importance. Military operations on the modern scale would be impossible without it.

Mental Hygiene.—Nothing in human experience imposes such stresses upon the mind and nervous system as does the strain of battle. The preparation for this ordeal, the conditioning of the environment to make it tolerable, and the treatment of the inevitable consequences constitutes a problem almost uniquely special to military medicine.

Diet and Nutrition.—No other group in society is in the situation where all of its food is prescribed and provided with as little element of individual choice. The impositions of travel, combat, and supply are all special. The principles are of course biochemical and the same for all men, but the solutions call for special management and make this too a special military problem.

Military Casualties.—Casualties of war demand special solutions and special training and preparation. Only a few will be named: From the earliest days of the club, the pointed stick, the sword, and the spear through to gunpowder, military wounds have been different and special. Practically speaking, gas casualties are confined to military operations and all we know about them we have learned from the military surgeons. The new terrible problem of radiation injury is of course almost solely the product of military activity. Its solution may be vital for us all in the next war. Altitude effects are an outgrowth solely of military aviation and as such are special problems, as are all the problems of a similar origin such as effects of gravity, anoxia, pressure problems, cold adaptation, heat tolerance, dehydration, and many others, but these are enough to make the point of their being special military casualty problems. Shell shock and battle fatigue are serious and essentially special military problems.

This incomplete list lays the foundation for the fulfillment of the first criterion that the problems be special. It follows that the solutions are special too and that the training needed to apply them must be of a special sort. It would seem unnecessary to dwell tiresomely upon the justification of the notion that there is a specialty of military medicine. That the recognition of this concept is important to the acceptance of the military surgeon and to his prestige is not so well known as it should be. Everything proper should be done to give this branch of the profession the dignity and importance it deserves. The armed services and the country will be the ultimate beneficiaries of a better medical service. This improved service will be more attainable if proper recognition is given to the men engaged in it.

Military Medicine as a Career

If a case has been made for military medicine as a specialty, it would be proper at this time to point out why young physicians should go into it as a lifetime career. There are two principal factors in the choice of a lifetime career when this choice is deliberately made—material considerations and intangible motivations. The second are more important. First of all, a man who feels at all must feel that he is important, that the work he does has meaning for the benefit of mankind and for the advancement of the principles in which he believes, and in addition it helps greatly for most of us if our fellows respect us and regard our work as significant. For these reasons it is important that military medicine be important; that its importance in contributing to national welfare be recognized publicly and privately; that the opportunities for self-expression and for contribution to knowledge through research exist, and that their existence be pointed out to young physicians. Military medicine can and should offer unrivaled opportunities for a full, useful, professional career. Let this be known.

On the material side the young physician should be shown how the discrepancy between the income from practice and that in the services has lessened. The tremendous material advantages of the service in respect to job security, protection during incapacity due to illness, provision for retirement, opportunity for leave for study and recreation, and chances for travel should all be publicized. It is perfectly true that in a material sense the military medical man, while still in my opinion greatly underpaid, is not by any means badly off. It can be, as many can testify, a richly rewarding career. These facts should be made more generally known to young physicians at the time when they choose their life work.

Future of Military Medicine

There are few to whom is vouchsafed the gift of prophecy, and I am not one of these. But, as Heraclitus pointed out in 500 B. C., and which recent events amply corroborate, there is no certainty but change. Military medicine is changing and will change in the future. What these changes will be is not so much a matter of chance as it is the deliberate determination of men. And so it is not idle to speculate as to whither we should go, nor is it too presumptuous for any interested person to express himself as to what our proper objectives should be. I shall be presumptuous.

I believe military medicine should be developed as a recognized specialty and given all the prestige and importance that can be given to it. At the same time the recognition of specialization as it is presently understood should be furthered. One of the fine things since the last war has been the program for the training of specialists within the services and the increased opportunity given to specialists to function in the framework of military medicine. I would advocate the organization of military medical men as a component part of the American Medical Association with status similar to a state medical society and with duly and democratically elected delegates to the house of delegates proportional to the number of doctors in the military services.

I hope that the process of integration, already proceeding, will be hastened and that closer relationships between the three services, the U. S. Public Health Service, and the Veterans Administration be established and maintained. The field of research and investigation, already important, should be further cultivated, with ample opportunity provided for talented military medical men to exercise their talents in it.

I would like to see administration further relegated to medical administration and the number of trained medical men taken from medicine for administration kept as small as possible. I would even favor, as in the Navy program of "engineering only," that certain medical officers who desire this kind of activity—and some of this administration can only be done by doctors—so indicate early in their careers and be trained for this. It might be well to let rank be conferred to these men only (for command responsibility requires rank) and to have those who do medical work only be known as doctor and be paid for the jobs they occupy and not for the rank they hold. This, I realize, is a big step to take.

Finally, and in this I know there are many both in and out of the military who would dissent, I favor a military medical school in Washington for the training of potential military medical men.

This section has done much to advance the prestige of military medicine. Much more needs to be done. I want to pay particular tribute to Dr. Cecil Andrews to whom most of the credit is due for the fine program and to the whole-hearted support we have had from all three services and from the defense department. Let us continue to work for the advancement and recognition of military medicine.

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Disk Lesions and X-ray Films.—Lumbar backache is a common precursor of sciatica in cases of lower lumbar disk herniation; but this is insufficient evidence upon which to base the naïve assumption that any chronic or recurrent lumbar backache is due to a defect in the intervertebral disks. However, the fact is that in the minds of most doctors no tissue of the many in the back has quite the reality of the bones and their joints. One reason for this is that we look every day at photographs of the back which show nothing but the skeleton. If by some odd chance a "Y ray" or "Z ray" was discovered which showed only, for example, elastic tissue or collagen or tissue fluid, the bones being translucent, and if we used it instead of X rays for a time, we should develop entirely new conceptions of the processes of disease in our patients. This is not to dismiss disk disturbance as a common cause of backache or even the usual one, but to question the worth of the evidence upon which it is so customarily assumed. . . . The X-ray film which demonstrates a return to normal alignment of a vertebral injury fails to reveal the mass of disk material which remains in the spinal canal and maintains a compression paraplegia. The X-ray picture cannot possibly exclude a disk prolapse. Plain X-ray films in all postures with the further aid of myelography may fail to discover any abnormality even in a case of the grossest severity. . . . Despite the presence of a damaging disk prolapse in the spinal canal, the intervertebral interval in the X-ray film may be quite normal.—W. S. Charlton, Whither the Disk? *The Medical Journal of Australia,* Dec. 8, 1956.

TRANSPORTATION OF SICK AND INJURED IN CIVILIAN AIRCRAFT

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Medical advice as to the transportation of patients in civilian aircraft is now based on an immense accumulation of experience. The year 1955 in the United States alone yielded data on more than 24 billion passenger-miles. Included were many passengers handicapped by various chronic defects, or going to medical centers for diagnosis, or returning home after treatment. The annual number of deaths during flight has ranged from 7 in 1948 to 20 in 1954; unconsciousness occurred 36 times in 1947 and 119 times in 1954. About half of the cases of unconsciousness or of death were ascribed to cardiovascular disease. Facts assembled on the incidence of motion sickness have led to concrete recommendations as to prevention and treatment. Certain patients should not fly without a companion well qualified to care for them in emergencies; certain others should not fly at all. For the vast majority of patients required to travel, however, flying is swift, comfortable, economical, and safe.

In daily increasing numbers the traffic and medical departments of the civilian airlines receive inquiries from patients and physicians as to the advisability of air travel.[1] There are many reasons for believing that sick and injured can be transported with greater speed, facility, and safety by air than by any other method.[2] Several authors have dealt at length with the medical contraindications for flight and have discussed extensively clinical and pathological conditions for which flying would be ill-advised.[3] All too often this has resulted in physicians counseling certain of their patients not to travel in civilian aircraft, thus denying them the advantages of swift, economical, comfortable, and safe transportation. This paper has been compiled through a literature survey and the submission of extensive questionnaires to the medical directors and vice-presidents of operations of the 56 certified commercial airlines and the operators of the 350 air ambulances now listed with the Civil Aeronautics Administration. Completed questionnaires and supplementary documents were received from 35 airlines (10 domestic trunk airlines, 9 international airlines, and 16 local service airlines) and 45 air-ambulance operators.[1]

In the early development of the civilian airline industry, the rule of thumb "those who can walk, may fly" was often applied, and a ticket was sold to any passenger who could pass the "look normal, walk normal, act normal, talk normal, smell normal" test.[1] Currently the Air Transport Association of America regulations state:

> Carriers will refuse to carry, or will remove en route, any passenger whose status, age, physical or mental condition is such, in the opinion of the carrier, as to:
> 1. render him incapable of caring for himself without assistance unless
>   a) he is accompanied by an attendant who will be responsible for caring for him en route
>   b) with the care of such attendant, he will require no more attention and assistance from employees of the carrier than an ordinary able-bodied passenger
> 2. render him objectionable to other passengers
> 3. involve hazard or risk to himself or other persons or to property.[4]

Since airlines are common carriers, passengers will be accepted regardless of race, color, or creed. Although few absolute exceptions to flight are made by the carriers, they will generally not carry intoxicated passengers, passengers with known, serious infections or contagious diseases, psychotic or mentally incapacitated patients, patients in body respirators, women in active labor, comatose patients, or passengers with severe skin rashes or cyanosis. Passenger selection is generally made by the senior ticket agent or station manager; however, in all cases, the captain of the flight has the final authority as to who may fly. For most carriers the policy determining which patients may fly represents a compromise between compassion to the sick and injured and their families and the responsibility to other passengers for safe, comfortable, and enjoyable flights.[1]

Armstrong[5] has recently stated that 3% of the regular airline passengers are ambulatory patients. During 1955 the American scheduled airlines flew 41,623,000 passengers over 24,338,000,000 passenger miles in 1,688 daily scheduled flights, utilizing 1,955 separate aircraft.[6] This total number, including passengers of all age groups (of whom two-thirds were male), constituted 33% of all intercity passenger-mile market within the United States. As an interesting side light, in a recent survey of June, 1956, it was found that of all passengers traveling between the North American continent and Europe more than 50% traveled by air.[6] This total passenger load was carried with an accident fatality rate of less than one per 100 million passenger miles.

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Most patients flying in commercial aircraft will fall into one of the following four categories:[7] (1) patients on their way to metropolitan area diagnostic and therapeutic clinics and hospitals, (2) convalescent patients returning home after therapy, (3) ambulatory patients with minimal pathology, flying in the course of their normal business and social activities, and (4) those terminally ill, traveling to be with relatives at the time of death.

Physiological Aspects of Flight

For medical purposes all airline passengers can be divided into three groups:[8] (1) those apparently well, (2) those with physiological deviation from normal with respect to air travel without pathological processes being present (such as pregnancy, early infancy, and congenital malformation), and (3) those apparently not well. Discussion of these three groups hinges on the major differences between surface travel and flight, i. e., irregular movements of the plane due to turbulence, decrease in total barometric pressure, and absolute decrease of the partial pressure of oxygen delivered to the lungs.

Air-sickness, the most common physiological disturbance associated with flight, is closely tied to turbulence. It is thought that the angular accelerations due to motion of the aircraft are the primary cause of motion sickness, but the underlying factors of anxiety, apprehension, and fear are strong predisposing influences. To many commercial passengers, flying seems more dangerous than it really is due primarily to lack of information on accident rate, the wide publicity usually given by the press concerning aircraft accidents, and confusion between military and commercial operations. Patients are usually more susceptible to develop motion sickness than are able-bodied passengers, and women and children are much more susceptible than adult males.[8] It has been found that visual orientation is an important sensitizing factor and that a higher incidence of motion sickness is encountered during daylight hours than at night. Since most aerial maneuvers are to the left, avoidance of the left window seats and flying with the seat at the reclining position will diminish the incidence. Assurance by the physician and premedication with anti-motion-sickness drugs greatly minimize the incidence of this condition.

Lederer[9] has stated, after careful evaluation of many anti-motion-sickness preparations, that the best prophylactic and therapeutic agents now available are cyclizine (Marezine) hydrochloride, 50-mg. tablet, and meclizine (Bonamine) hydrochloride, 25-mg. tablet or chewing tablets (gum). For children 6 to 10 years of age one-half the dose is given, and for children under 6 years of age one-fourth the adult dose for either drug. Cyclizine is less apt to cause drowsiness than any other remedy. Its effect is almost instantaneous, and its therapeutic effect will last approximately four hours. It should be taken prophylactically 20 to 30 minutes before take-off. Meclizine is more apt to cause drowsiness, but its effects will last approximately 24 hours. The same conclusions were reached by the Army, Navy, and Air Force Motion Sickness Team in a study of 16,920 soldiers and airmen crossing the Atlantic.[10] Prophylactic measures such as no preflight alcohol ingestion and a light preflight meal are also efficacious. Resistance to the development of air sickness greatly increases with age and travel experience. Pressurization systems and higher wing loads have made it possible for aircraft to fly at higher altitudes, thus avoiding much of the turbulence. Not all aircraft are pressurized, nor is it necessary on low-altitude flights, but more and more modern transports have pressurization systems which maintain passenger compartment altitudes at or below 10,000 ft. regardless of flight altitude.[1] Pressurization gives the advantages of comparatively slow ascent and descent of the passenger compartment, minimizes the change in total atmospheric pressure, and makes oxygen unnecessary in flight on an individual basis.

The group of passengers apparently well needs no discussion. Of the physiological deviations from normal, let us first consider pregnancy. The following policy is recommended by the Airline Medical Directors Association.[7]

> Any woman in a pregnant condition shall be accepted from the beginning of the first month on through to the end of the eighth month of gestation without question. Any woman in the ninth or last month of pregnancy shall be accepted who can furnish a certificate from an obstetrician dated within 72 hours of departure stating that he has examined and found her to be physically fit for transportation from (place) to (place) on (date) and that the estimated time for the birth of the baby is (date).

Women in late stages of pregnancy should, if possible, select seats facing the rear, so that the safety belt may be worn rather loosely over the legs and under the fetal abdominal bulge. In-flight oxygen may be advisable for those with mild dyspnea due to the increased abdominal pressure with resultant limitation of respiration. It is not unusual for those near term to develop false labor contractions within 24 hours after descent, and any patient traveling in the later stages of pregnancy should be warned that this may occur.[1] Webb and Harvey [11] have concluded, from their own statistical study of the effects of travel by air or surface on pregnant military dependents and from a review of the previous studies by Beach, Diddle, Mackie, Whittingham, Guilbeau, and Turner, that travel by present-day means (aircraft included), with judicious use of common sense, is without harmful effect on a normal pregnancy regardless of the duration of the pregnancy. I know of no reliable report of deleterious effect to the unborn child or mother due to premature labor or anoxemia at altitude on a commercial aircraft.

Infants less than 10 days of age should not be transported by air for any great distance, as their respiratory mechanisms are not yet sufficiently established to permit the infant to be exposed to a respiratory stress situation.[8] Beyond this age, however, babies with a normal cardiorespiratory system have an advantage over adults, since it is well known that infants tolerate hypoxia better than adults. The wide range of congenital malformations must be considered on an individual basis. Congenital heart conditions and lung atresia are not ordinarily contraindictions to flight. If the individual is ambulatory and is able to climb one flight of stairs, ordinary flying is permissible. Individuals limited in activity may fly, provided therapeutic levels of oxygen are provided before flight is undertaken.

TABLE 1.—*Comparative Volume of Gastrointestinal Gases and Percentage of Oxygen Saturation of Arterial Blood at Various Altitudes**

Altitude, Ft.	Relative Body Gas Volume	% Arterial O_2 Saturation
Sea level	1.0	96
5,000	1.2	92
10,000	1.5	88
15,000	1.9	80

* Data from Armstrong, H. G.: Principles and Practice of Aviation Medicine, ed. 3, Baltimore, Williams & Wilkins Company, 1952.

Other Medical Considerations

Next let us consider patients with cardiorespiratory disease. For those with valvular heart disease, angina pectoris, hypertension, asthma, and pulmonary tumors, the certified airlines have available on almost every flight, either free of charge or at small cost to the passenger, oxygen delivered through nasal or oral masks.[1] These systems may be adjusted to deliver oxygen-enriched ambient air or 100% oxygen. As air transportation becomes more common, the anxiety formerly encountered frequently on commercial liners has become much less of a problem. Preflight sedation and reassurance by the physician will greatly add to the in-flight comfort of these patients. Although the pressurization systems will maintain a cabin altitude of 10,000 ft. or below, trapped gases within body cavities will still expand to approximately one to five times their volume at ground level. For this reason it is believed that patients with spontaneous or therapeutic pneumothorax, mediastinal or subcutaneous emphysema, infections by gas-forming bacteria, and any of the large group of diseases which have as part of their make-up trapped gases within body cavities, should not fly.

TABLE 2.—*In-flight Injury, Unconsciousness, and Death on American Scheduled Airlines**

Type of Incident	Year								
	1947	1948	1949	1950	1951	1952	1953	1954	1955
Unconsciousness	36	67	63	85	83	89	117	119	88
Death	14	7	9	13	10	16	17	20	18
Injury	..	..	..	..	22	12	10	13	5

* Data from reference 13.

Two other clinical conditions which may result during flight are aerotitis and aerosinusitis resulting from improper ventilation of the middle ear or sinuses during descent from altitude. They are caused by tissue edema resulting from upper respiratory infections or lymphoid blockage of eustachian tube and sinus orifices and by failure to "clear" these cavities during descent. The incidence of these conditions can be greatly reduced by use of nasal vasoconstrictors, by staying awake during the letdown and landing phases of flight, by chewing gum or eating candy, by swallowing frequently, or by doing a mild Valsalva maneuver. Nursing infants should be offered the bottle or breast during descent to assist in keeping the eustachian tube orifices open by oral pharynx muscular contractions.

Most carriers[1] will allow a blind passenger's seeing-eye dog to travel in the passenger compartment if properly muzzled and secured on a short leash. Wheel-chair patients will be carried in most circumstances if prior arrangements are made for assistance to the passenger during loading and deplaning activities. If prior arrangements are made, many carriers will transport litter patients either on the standard canvas stretcher or on litters specially designed for the specific aircraft, which are available through the traffic department. Patients wearing plaster casts will be transported if the casts are not of such size or shape as to prevent the passenger from being accommodated by the regulation seat. Patients whose mandibles are fixed, either by jaw wiring or head traction, are not advised to fly commercially due to the possibility of air sickness and aspiration of vomitus. However, I, as well as other physicians experienced in the air evacuation of military patients, have had considerable success in flying persons whose mandibles are fixed with safety by use of the blunted hypodermic needle "rip cord" method of fixation developed by Traeger.[12] In this system all wires loop around hypodermic needles, one on each side of the mouth. With only slight traction, these needles pull free, permitting the patient to open his mouth to vomit if necessary. Colostomy patients should be advised

TABLE 3.—*Example of Certificate of Release from Responsibility*

I, ..., do hereby release Any Airlines Incorporated from any and all responsibility for injury or illness incurred as a direct or indirect result of my admitted .... condition while boarding, flying in, or deplaning from the aircraft designated as *Any Airlines Incorporated flight ...... on this ......* day of ...., 19...... from .... to .... *I further state that my condition is not* contagious and I will not require any assistance from, or medical treatment by, Any Airlines Incorporated personnel en route.

....
Signature

Accepted by:
....
Street Address

....
Representative

....
City State

that their bags will expand somewhat in flight due to the pressure change. Tracheotomy patients will be transported so long as they do not require suction. Patients with diabetes mellitus may fly if they can give themselves their own insulin or will need no insulin in flight. However, those near diabetic coma or subject to sudden insulin shock should not fly. Epilepsy has a tendency to manifest itself at altitude, especially in nonpressurized aircraft, due to anxiety, hyperventilation, and very mild hypoxia. Moderately heavy preflight sedation, reassurance, and proper oxygenation during flight will usually permit them to fly satisfactorily. Epileptics subject to frequent seizures should travel with a companion when possible.

TABLE 4.—*Example of Medical Release*

I, John Doe, M.D., being duly registered and licensed in the State of Florida, certify that in my opinion, the health and physical condition of:

Mr. Jim Jones

whom I have recently examined, is such that he/she can fly from ________________ to ________________ as a passenger, without risk to others or to himself/herself and without the requirement of more attention from those engaged in operating the plane or attending its passengers than is ordinarily required by an average passenger, under the following conditions:

Check one:
1. Can fly when accompanied by Registered Nurse as *attendant.*
2. Can fly unaccompanied.

The patient's condition is such that there should be no lapse of consciousness or tendency to become nauseated. The patient will not require treatment employing the use of apparatus. The patient's condition is such that irregular flight operations, a flight of greater length than the published schedule, or a flight terminating at a point other than the patient's expected destination will not involve *risk to the patient.*

Signed John Doe
Address 16439 Collins Ave., Miami Beach, Fla.
Date July 9, 1956

I understand that if necessary for the comfort of other passengers, or upon competent medical advice, Any Air Lines, Inc. may refuse passage or remove me at any point and refund the appropriate portion of my fare without further obligation.

Signed Jim Jones
Passenger

The airline stewardesses, although no longer required to be registered nurses, are well trained in first aid and carry as part of their in-flight equipment bandages, splints, aspirin, bufferin, aromatic ammonia spirits (smelling salts), anti-motion-sickness drugs, glyceryl trinitrate, and padded tongue blades for passengers who have convulsions.

Data on in-flight injury, unconsciousness, and death on scheduled domestic air carriers between 1947 and 1955 are summarized in table 2.[13] Approximately 25% of all in-flight deaths and incidents of unconsciousness were associated with previously existing illnesses or disabilities. Of the deaths for which a cause is reported, about 50% were due to cardiovascular disease. The frequently reported causes of unconsciousness were cardiovascular disease, epilepsy or epileptiform conditions, recent emotional stress, anxiety states, fatigue, and motion sickness. The majority of fatal incidents occurred while passengers were in their seats. Mortality rates were about equal for men and women, but women became unconscious three times more frequently. Injuries reported were in almost every case minor and, with one exception, due to turbulence of the aircraft.

The 350 air ambulances are distributed geographically about the United States, with most planes per population unit in the great plains and the southwestern states, and are generally one-or-two-engine, two-to-five-place aircraft. Patients with acute surgical emergencies comprise a large percentage of those carried by these aircraft, and the operators make very few exceptions as to which passenger may fly, generally accepting anyone recommended by a physician and carrying a physician's certificate.[1] All aircraft used in these operations are licensed by the Civil Aeronautics Association and have met specific air-worthiness standards. They are generally equipped with one or two litters, in-flight oxygen, bedpans, urinals, emesis basins, blankets, pillows, sheets, and, in many cases, in-flight suction apparatus. They perform an extremely valuable service in transporting patients from isolated or rural areas to metropolitan diagnostic and therapeutic centers.

The comfort and safety of passengers in flight will be greatly enhanced if the physician will furnish a medical certificate to the ticket agent and a letter to the flight stewardess outlining generally the patient's condition and such attention as may be needed during the trip. Passengers should be advised to arrive at the airport well in advance of take-off time so that they may be loaded in the most desirable seats for their condition prior to the loading of the other passengers. In general, night or early morning flights will be much less turbulent than those during midday or afternoon.

Due consideration of the total distance to be traveled, elapsed travel time, and whether the patient would have to travel by some other means will often make obvious the decision as to whether or not flight should be undertaken for any individual patient. With modern aircraft equipment for pressurization, ventilation, and temperature and humidity control, the commercial airliner approaches very closely the comfort of the patient's own living room. For the vast majority of patients required to travel, modern aircraft offers swift, comfortable, economical, and safe transportation.

287 E. North Broadway (14).

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PSYCHOSOMATIC ASPECTS OF ALLERGY IN CHILDHOOD

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The author's experience with allergy in children has fortified his belief that allergic illnesses in childhood have a basic immunological etiology. Early recognition of the allergic state, thorough and careful allergic diagnostic study with adequate treatment, both therapeutically and prophylactically, insures a good result in most children with allergic illness. If such illnesses fail to respond to medical management, the child's physical and psychological environment must be more deeply evaluated. Separation of the child from his usual surroundings, particularly his parents, for periods of 6 to 12 months has given results that were rewarding for the greater number of children. The influence of maternal rejection, fear of separation from the mother, and other forms of unhappiness in the home environment is recognized, but the patient also deserves the relief he might obtain from an allergic investigation, immunization, and medication.

Today, as many of us know from actual experience in private practice, the greater number of children with allergic illness of short duration respond readily when treated on a strictly allergenic basis. Their allergic illness is most often caused by allergenic substances to which they are sensitive. There is, however, a small, vocal minority of physicians who have attempted to seed both the medical and lay minds with the thought that all allergic symptoms are primarily induced by psychological imbalance. Specifically with reference to asthma, some physicians have claimed that psychological influences may play the significant role in causing attacks of asthma for the first time in many patients. Claims on the part of some psychiatrists and allergists that disturbances of an emotional nature may give rise secondarily to repeated episodes of asthma are generally accepted. Few physicians concerned with the treatment of allergic diseases would deny that emotional disturbances are in some way related to this group of illnesses. However, many competent physicians seriously question the sweeping generalization that asthma arises primarily in mentally disturbed individuals.

Parent-Child Relationship

Weiss[1] postulated, in 1922, that the asthmati attack is caused by fear of separation from th mother. French and others[2] studied 11 asthmati

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children—6 boys and 5 girls—at the Chicago Institute for Psychoanalysis. They revealed that only five of this group remained in analysis for as long as six months. The patients showed a common pattern. Their attacks of asthma were considered to be equivalent to a suppressed cry for the mother whom the patient is in danger of losing. Situations which threaten to separate the patient from the mother or mother-figure tend to precipitate attacks. Moreover, these situations usually result from some temptation to which the child is exposed. Asthma is expressed as part of a defense mechanism. From the analytic material, the writers feel that the fear of separation from the mother is a primary etiological factor and not merely a secondary reaction to the attack itself. The study of such a small group over a period of only six months without adequate controls is hardly conclusive. The authors admit to the theoretical nature of much of their data. Their contributions have been evaluated as being thoughtful and stimulating, but the material presented and the conclusion derived from this group is unsatisfactory.

Subsequently, Miller and Baruch[3] published a series of papers in which the mother-child relationship was explored in allergic, particularly asthmatic, children. They reported that maternal rejection was established in 98% of a group of allergic children, whereas, in a control group of psychologically disturbed nonallergic children, only 24% revealed evidence of significant maternal rejection. Marked differences in expression of hostility were found to exist between these two groups of children. Eighty-three per cent of the nonallergic or control group of disturbed children expressed open hostility toward the parent or parents, while only 20% of the allergic children could do this. They theorized that the allergic child is rejected by his mother and, because he is unable to express his hostility toward her, he often turns it inward upon himself; the asthmatic attack results from the conflict produced in him by his rejecting mother.

Despite this statistical evaluation by Miller and Baruch, their conclusions have been questioned because of the largely subjective nature of the material, which depends upon the interpretation of play and the assumptions that certain behavior is linked with certain emotions and that asthmatic attacks are causally related to the particular mother-child relationship. Two significant definitions of "maternal rejection" have been offered us. Newell[4] defined it as "that situation where the birth of the child was unwelcome to the mother." More broadly, Figge[5] said that a "rejecting mother is one whose behavior toward the child is such that she consciously or unconsciously has a desire to be free from the child and considers it a burden."

Jessner and associates,[6] in a psychoanalytic study of asthmatic children, emphasized the importance of the emotional impact of nearness and separation for the asthmatic child and its mother. They stress the paradox of the mother clinging to her child and pushing it brusquely away toward premature independence, which can be understood only in terms of the mother's unconscious need and her defense against it. They agree with Miller and Baruch's concept of maternal rejection but describe this as only one aspect of a complex relationship.

The fallacy of the maternal rejection theory has been noted by two prominent psychiatrists, Levy[7] and Ziskind,[8] who have commented that, in itself, maternal rejection is a universal characteristic of our society. All of us have been accepted and rejected by our parents at different times. Although Ziskind feels that the problem becomes one of quantitative evaluation to indicate at what point this universal experience becomes a pathogenic or critical factor, there are no quantitative means available for accurately measuring these phenomena.

Defense Reactions

Wolf,[9] in 1950, supposed that the allergic reaction of the upper respiratory tree is a defensive one of shutting out (bronchospasm) and washing away (excretion). Abramson,[10] recently, on the basis of psychoanalytic studies of allergic individuals, postulated the syndrome of engulfing parents and suggested the term "Cronus complex" for it. He feels that the theory of maternal rejection often not only is incomplete but may frequently be misleading in the attempt to understand and treat the severe and protracted allergic manifestations in children and adults. He holds that in some cases where the allergic process persists, as in severe eczema or uncontrollable asthma, the disturbance in the parent-child relationship is not parental rejection but rather mutual engulfment or introjection. Rejection subsequently may ensue when mutual engulfment fails to satisfy the parent's needs. Rejection is not limited to the maternal parent but may also or only involve the paternal figure, and, even then, rejection need not be manifest in all areas.

Bacon[11] recently theorized that asthma caused by a neurosis is a response to unconscious fears of assault upon the respiratory apparatus, and the physiological changes that accompany it are attempts to ward off that assault. She theorizes that aggressive excretory fantasies, stimulating the excretory mucosae (including the genital), may reflexly stimulate or sensitize the respiratory tract. When the respiratory tract has been thus sensitized, asthma can be precipitated by aggression from a punitive superego or from an environmental equivalent.

Treatment

Some 25 years ago, it was recognized that, in many cases, children with severe, intractable asthma were more effectively treated away from their home surroundings. The deleterious relationship of a disturbed, tense, and unhappy home environment on children who have protracted, severe asthma was emphasized. The term "parentectomy," denoting the need of separating these chronically ill children from their parents, was coined by Peshkin.[12] Subsequently, a home in Denver was established to provide long-term care for these children. Many of these chronically incapacitated children have spent two to three years at the home and have returned vastly improved.

The practicing psychiatrist and the "orthodox" allergist fail to understand each other. The word psychiatry and the prejudice aroused by it, as well as the difficulties of language, methodology, and excessive claims, all contribute to the misunderstanding in these areas of discipline.

The personality structure of allergic children has been charted to demonstrate (1) a neurotic type of personality, (2) a high intelligence on verbal tests with poorer performance ability, (3) a marked over-anxiety and lack of self-confidence, (4) a considerable latent aggressiveness and egocentricity, and (5) a compulsive type of personality with exaggerated orderliness and cleanliness. One group of investigators established that the single feature common to the personalities of asthmatic children was a deep-seated insecurity and a varyingly intense need for parental love and protection. Another study established that immaturity of behavior, seclusiveness, and moodiness with depression as the predominant mood were characteristics of the asthmatic children as a group. Thus the attempt has been made to describe accurately the personality of the child who has asthma. But despite this aggregate of words, there emerges no clear picture of a particular type of personality structure.[13]

Continued and detailed study of many children in the past decade, both in private practice as well as in an institutional setting, has fortified my belief that allergic illnesses in childhood have a basic immunological etiology. Awareness of this significant fact is of major importance, for treatment directed on this level gives excellent results in the majority of children. Early recognition of the allergic state and thorough and careful allergic diagnostic study with adequate treatment both therapeutically and prophylactically insures a good result in most children with allergic illness. When the persistent allergic condition fails to respond to adequate and competent allergic management, in other words, when allergy becomes chronic, then the child's environment, consisting of both physical and mental factors, must be more deeply evaluated. However, often it becomes necessary to enforce separation of the child from his surroundings. My own program for severely asthmatic children was established in 1953 at the Loeb Home, Eastview, N. Y., 40 miles from New York City, where children have spent periods of from six months to one year, and the results achieved were rewarding for the greater number of children.

This program substantiates in essence the importance of removing from their parents severely ill asthmatic children who have failed to respond to competent allergic management. Thus, the emotional stresses or barricades erected by both parents and child, which interfere with the patient's getting well, are minimized or reduced. Investigations of their allergic status and subsequent treatment may follow during this separation. Experiences with many of these chronically ill children during their interim "sabbatical" permits adequate allergic survey and management and, in addition, the opportunity "to study the effects of mental weather upon the ramparts of the body."[14]

It is well to recall the fact that within the narrow confines of one's body there is a very close reciprocal relationship between soma and psyche. The patient deserves the relief he might obtain from an allergic investigation, immunization, and medication. The focusing of his attention only on the emotional factors in his illness may direct the patient away from adequate medical treatment.[15] Frequently, parents will run from a physician who consciously or unconsciously points out an unsuitable parent-child relationship, and they are, as Abramson [10] has so clearly pointed out, both consciously and unconsciously grateful to the physician who studies the child's allergic symptoms on a strictly physical basis. These protracted allergic problems in children are basically immunological, but, during the course of treatment, if these immunological problems are inadequately resolved, then psychological disturbances secondarily intervene and may distort the entire presenting picture. The allergic child is no different from any other child with a chronic illness. Combined attention to the whole individual—body and mind—produces better therapeutic results than attention solely to either one or the other.

16 E. 79th St.

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EFFICACY OF URETHRAL CATHETERIZATION FOR DETERMINATION OF URINARY TRACT INFECTION

RESULTS WITH A NEW TECHNIQUE

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It is extremely important to differentiate between causative micro-organisms in urinary infection and those which are merely contaminants. Despite meticulous preparation of the urethral meatus and surrounding surface, the anterior part of the urethra retains its "normal" flora. A technique is presented to prevent or at least lessen the risk of contamination in obtaining a bladder urine culture.

In many instances of positive cultures from bladder urine obtained in the usual manner, there is uncertainty as to whether the micro-organisms found are the causative ones in an actual urinary infection or are merely contaminants. The importance of contamination in urethral catheterizations has been clearly shown by Guze and Beeson,[1] who obtained urine specimens from women by direct needle aspiration of the bladder at laparotomy and shortly afterward obtained a second specimen in the operating room by catheterization. Of the 12 urine specimens obtained by each method, those obtained by needle aspiration were all sterile, whereas the catheterized specimens had growth in four of the cases. They also cultured the tip of the urethral catheter after having inserted it into the urethra of women who had been prepared in the operating room and found micro-organisms in 6 of the 13 cases. It appears, therefore, that, although the urethral meatus and surrounding surface may be rendered more or less sterile, depending upon the thoroughness of cleansing, the anterior part of the urethra itself retains its "normal" flora. A catheter introduced into the bladder must pass through this flora.

In an effort to obviate this difficulty, a technique was conceived that made use of a catheter within a catheter and allowed the separate collection of bladder urine obtained through each catheter for the purpose of comparison. It was thought that in this way the inner catheter would be shielded by the outer one and therefore would be less apt to become contaminated. The insertion of the outer catheter into the urethra and bladder would not differ essentially from the technique usually employed in obtaining bladder urine.

Method

The study was limited to female patients who required catheterization for any reason, usually on the suspicion of a urinary tract infection. Some of the patients were known to have cystitis or pyelitis. Males were not included for the reason that in them a "clean voided" specimen is usually obtained for culture. Also, patients were not used who had received any antibacterial drugs within the previous 48 hours. A total of 45 catheterizations in 38 patients makes up the study.

A no. 20 rubber catheter was used for the outer catheter. Since this has a side perforation near the tip, the tip was cut off in order to allow the inner

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catheter to come out straight instead of at an angle. The inserting end was then tapered to facilitate insertion into the urethra. The catheters are shown in figure 1 and their positions in the urethra and bladder are represented diagrammatically in figure 2. The inner catheter was an unchanged no. 8 rubber catheter.

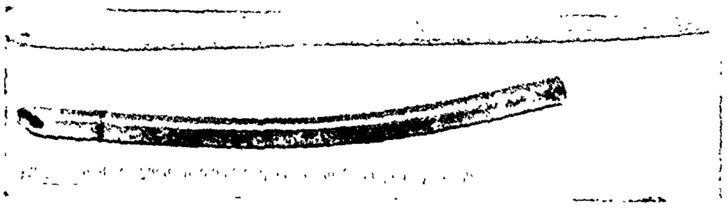

Fig. 1.—Outer and inner catheters used to obtain specimens of bladder urine for culture.

Both hands were gloved, and, after thorough cleansing of the vulva with soap sponges followed by cleansing with sponges soaked with benzalkonium (Zephiran) chloride, the labia minora were spread apart with the fingers of the left hand, and the outer catheter was inserted into the urethra a distance of 2 cm. This is normally short of the bladder by 1 to 2 cm. The outer catheter was then held in place by the left hand shielded by sterile gauze while with the right hand the inner catheter was inserted into the outer one and pushed through it as far as the bladder, to the point at which urine was obtained. While an assistant held the sterile centrifuge tubes (which were supplied with cotton stoppers), two specimens were obtained; the inner catheter was then withdrawn and its tip dipped into a tube of tryptose phosphate broth, with use of aseptic technique. The outer catheter was then advanced as far as the bladder, and two specimens were obtained through it. The outer catheter tip was cultured in the same way as the inner one.

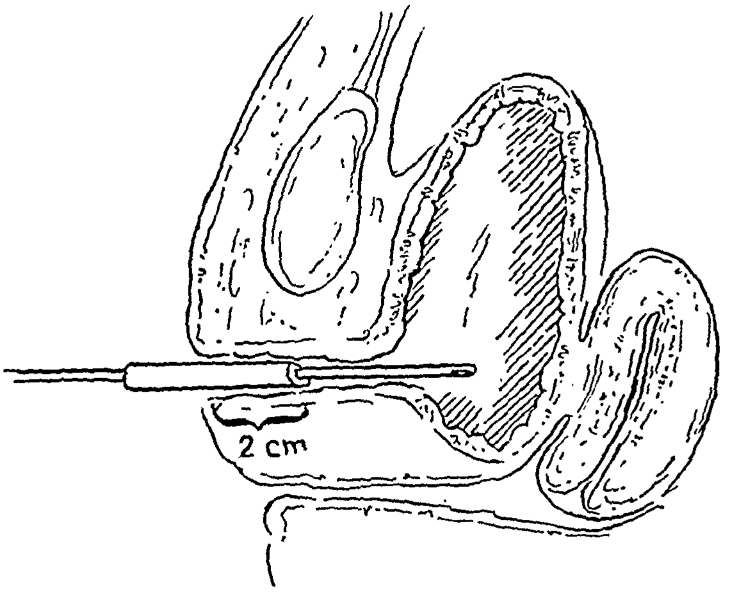

Fig. 2.—Catheters in place, the outer one 2 cm. into the urethra and the inner one into the bladder.

Of each pair of urine specimens, one was used for a routine urinalysis and a Gram stain was made of the centrifuged sediment. The other specimen was centrifuged for 10 minutes, the supernatant urine was poured off, and tryptose phosphate broth was added in an amount equal to the original volume. The two urine cultures thus prepared and the catheter-tip cultures were then incubated at 37 C for a period of 96 hours before being considered negative. As soon as any growth became apparent in the tubes, streak cultures were made on heart infusion agar containing 10% defibrinated sheep cells and Levine's eosin-methylene blue agar for further identification of the micro-organisms. Fermentation studies were done in addition when necessary.

Results

There were 42 urine culture specimens obtained through the outer catheter, of which 22 (52%) were positive. Of 41 urine culture specimens obtained through the inner catheter, 13 (32%) were positive. The tip of the outer catheter had micro-organisms in 39 of the 44 catheterizations (89%), and the tip of the inner catheter had micro-organisms in 23 of 44 catheterizations (52%). Smears were obtained of the outer catheter urine in 37 cases, and of these 20 (54%) were positive. Smears of inner catheter urine were obtained in 33 cases and were positive in 9 (27%). These results are represented in figure 3.

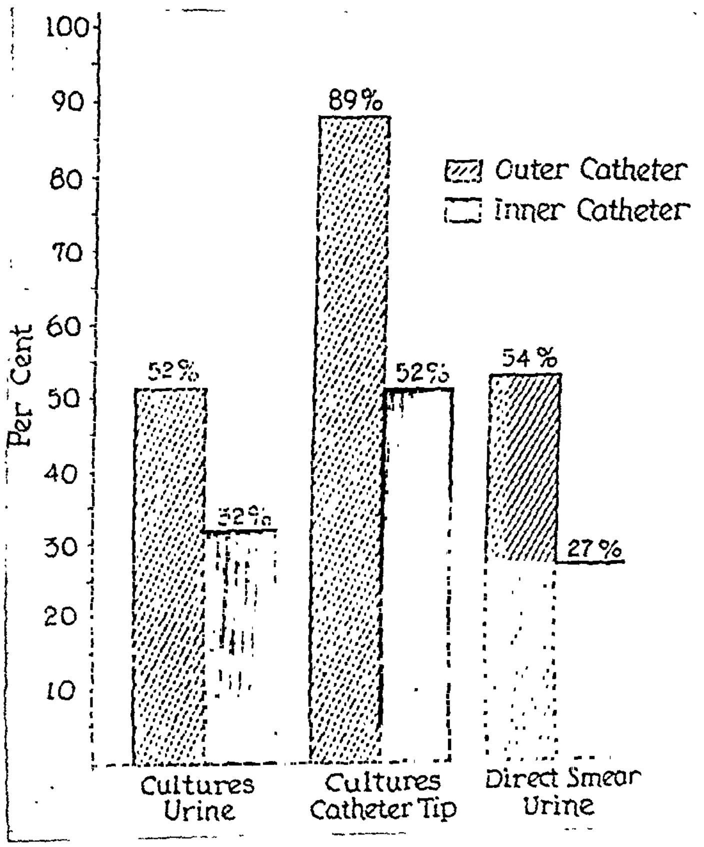

Fig. 3.—Frequency of positive cultures and direct smears in outer and inner catheter specimens.

Of the 40 catheterizations in which both outer and inner catheter urine cultures were obtained, in 11 (27%) the outer catheter specimen contained a micro-organism not also present in the inner catheter specimen. On the other hand, in only one of the 40 catheterizations was a micro-organism present in the inner catheter urine that was absent from the outer catheter specimen.

Of 44 catheterizations in which the tips of both outer and inner catheters were cultured, in 26 (59%) a micro-organism was present on the outer catheter and not on the inner one. In 9 of the 44 catheterizations the reverse was true (20%).

Both outer and inner catheter urine smears were obtained in 30 catheterizations. In five the "outer" smear was positive while the "inner" was negative, and in one instance the reverse was true. In the remaining 24 catheterizations there was no difference between the two smears.

The percentage of catheterizations showing a difference in urine culture, catheter-tip culture, and urine smear is shown in figure 4. There were five catheterizations in which the outer catheter urine smear was positive and the corresponding urine culture or both the urine culture and the catheter-tip culture were negative.

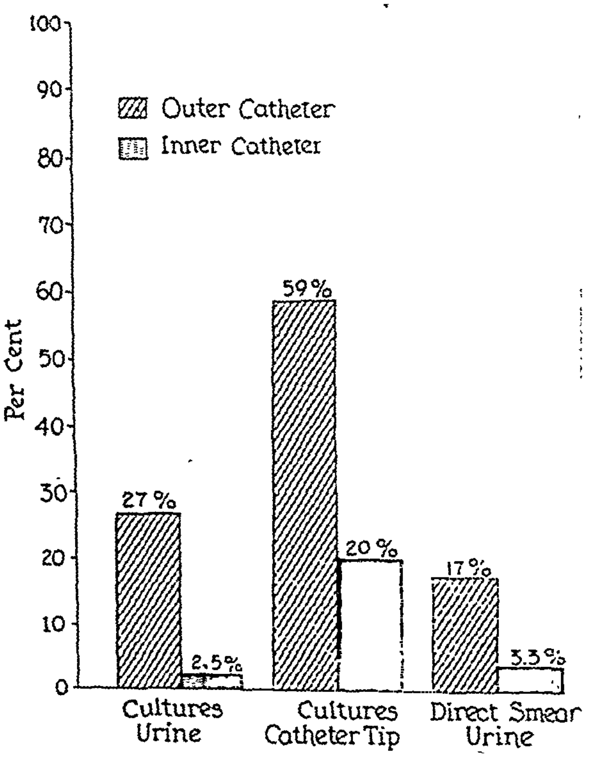

Fig. 4.—Percentage of catheterizations in which there was a bacterial species present in the outer catheter specimen absent from the inner and the reverse.

The micro-organism most frequently encountered was Micrococcus (Staphylococcus) pyogenes var. albus, and it occurred in the outer catheter cultures (urine and catheter tip) twice as often as in the inner catheter cultures. Second in frequency were coliform bacilli, which were only slightly more frequent in the outer catheter cultures than in the inner, the relative frequency being 7:5 in the urine cultures and 7:6 in the catheter tip cultures. Bacilli of the Proteus group appeared five times in the outer catheter-tip cultures but only twice in the inner, and were present only once in the urine culture (both outer and inner). Other micro-organisms were recovered infrequently, no one occurring in more than three catheterizations.

Comment

The results obtained show a decided difference between the two culture series with respect to percentage of positive findings, that is, positive urine cultures were obtained in 52% in the outer catheter series as compared to 32% in the inner, and positive outer catheter-tip cultures were obtained in 89% as compared to 52% positive in the inner. Hundley and coworkers[2] catheterized 50 normal nonpregnant females and obtained positive cultures in 44%. Marple[3] catheterized 100 unselected patients from a women's medical ward using a glass catheter after preparing the urethral orifice area with boric acid and merbromin (Mercurochrome) and obtained positive cultures in 31%. If it is remembered that our series consists of patients in whom there was at least the suspicion of a urinary tract infection and of a few with known infections, a higher percentage of positive results is to be expected. Even so, the finding of positive urine cultures in 32% in the inner catheter series is very close to the percentage obtained by Marple in 100 unselected cases and suggests some effect of protection against contamination in our series.

The 89% positive outer catheter-tip cultures is higher than the frequency obtained by Guze and Beeson.[1] Their catheterizations were carried out in the operating room under optimal conditions for aseptic technique. The conditions of our catheterizations were the same as those of the standard technique of catheterization on the ward. Whether this is adequate to explain our higher frequency of positive catheter-tip cultures cannot be stated. The frequency is much lower in the inner catheter-tip culture series (52%).

The direct smear results are consistent with the culture results in showing a higher percentage of positive findings in the outer catheter series. However, they are not considered to be as sensitive for purposes of comparison as the cultures, since in cultures that are allowed to incubate for 96 hours there is no difficulty in distinguishing positive and negative results, but where there are only a few micro-organisms in a smear these might well be missed.

The preponderance of positive cultures in the outer catheter series appears to be irrespective of the type of micro-organism, although in the case of coliform bacilli the difference was small. Most of the patients in whom coliform bacilli were recovered in the urine were considered prior to the catheterization to have a urinary tract infection, and in these patients all specimens were positive for coliform bacilli.

The relative frequency of the various micro-organisms is different from that obtained by one of us and co-workers,[4] who found Escherichia coli the most frequent micro-organism in the urine of 325 patients studied, with Streptococcus faecalis and Pseudomonas aeruginosa next in frequency. The present study, however, is much smaller and also is limited to female patients, whereas in the larger series both sexes were included. Also, the previous study was limited to patients considered to have established urinary tract infections, while in the present study the majority of patients were free of symptoms. The indication for catheterization in the present study usually was the presence of more than 8 to 10 leukocytes in a urine specimen taken after a vaginal douche. The greater differential between outer and inner catheter specimens in the case of micrococci than in the case of coliform micro-organisms supports the impression that most often micrococci are contaminants from the urethra.

When a count is made of the individual catheterizations that show a micro-organism present in one set of specimens not present in the other, the contrast becomes even more marked: in 27% the micro-organism was present in the outer catheter urine only and in 2.5% it was present in the inner catheter urine only; for the catheter-tip cultures the respective values were 59% against 20%. This last figure seems high. In certain instances it is possible that the micro-organism failed to grow in the outer catheter-tip culture because of the presence of other micro-organisms that inhibited its growth. In other instances it is probable that the inner catheter tip became contaminated through faulty technique from some source other than the outer catheter or the urinary tract. An effort was made to avoid contamination, but at the same time we endeavored to keep the procedure as simple as ossible and as unencumbered as the usual catheterization procedure.

In 33 catheterizations in which a smear was obtained of inner catheter urine there were nine positive smears. Urine cultures and catheter-tip cultures (outer and inner) in the same nine catheterizations were positive for the same micro-organisms as the smears. On the other hand, there were five catheterizations in which the outer catheter urine smear was positive and the corresponding urine culture or urine culture and catheter-tip culture were negative. We can only speculate on the possible reasons for this. In most cases the micro-organisms seen on smear were rare. Failure to grow in the tryptose phosphate broth may have been due to a difference of acidity or to some inhibiting substance in the urine. It is also difficult to say whether these positive smears represent prior urinary infection or contamination, although in at least two instances it seems probable that the micro-organism was a contaminant. This is contrary to the experience of Sanford and co-workers,[5] who did not find any negative cultures associated with positive smears.

The aim of the present study has been the discovery of a means of preventing or at least lessening the risk of contamination in obtaining a bladder urine culture. Other investigators [6] have sought means of recognizing contamination by doing quantitative bacterial cultures, the probability being high that one is dealing with a contaminant where the bacterial count is low.

Summary

In a new method of obtaining a bladder urine specimen for culture from female patients, bladder urine is obtained through a small rubber catheter inserted into the bladder through a larger catheter inserted only into the urethra and not into the bladder. The purpose of the latter is to protect the inner catheter from contamination from micro-organisms present in the urethra. In the present investigation a bladder urine specimen was also obtained through the outer catheter by advancing it into the bladder after removal of the inner catheter, a procedure which is essentially the same as the standard technique for obtaining a bladder urine culture specimen.

Cultures were made of the catheter tips, and cultures and direct smears were made of the urine specimens. There were 45 catheterizations in 38 female patients. The outer catheter urine cultures were positive in 52%; the inner catheter urine cultures were positive in 32%. The outer catheter-tip culture was positive in 89% of the catheterizations and the inner catheter-tip culture in 52%. The direct smears of the outer catheter urine were positive in 54%; those of the inner catheter urine were positive in 27%. Where both outer and inner catheter specimens were obtained in the same catheterization there was a micro-organism present in the outer catheter specimen not present in the inner in 27% of the urine cultures and in 59% of the catheter-tip cultures. The reverse situation was obtained in 2.5% of the urine cultures and in 20% of the catheter-tip cultures.

Since there is an appreciably lower frequency of positive cultures in the inner catheter series and since the procedure described is not difficult to perform, it is felt that it may have some practical application.

720 N. Michigan Ave. (11) (Dr. Rhoads).

This study was supported in part by the Ames Laboratory, Elkhart, Ind., and by the Women's Service League, Wesley Memorial Hospital, Chicago.

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FEBRILE TRANSFUSION REACTIONS CAUSED BY SENSITIVITY TO DONOR LEUKOCYTES AND PLATELETS

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The hypothesis that some otherwise unexplained febrile reactions to blood transfusions may be caused by isoimmunization of patients against the donors' leukocytes was tested in 10 patients who needed transfusions. Five patients (group A) had previously had from 20 to 85 transfusions, had histories of repeated transfusion reactions, and had demonstrable antibodies against the specific normal leukocytes administered during this study. The other five patients (group B) had had only seven or less previous transfusions, with no histories of transfusion reactions. Group A did not experience adverse effects when the blood used for transfusion was so prepared, by centrifuging, as to remove as much as possible of the buffy layer, but all reacted with fever, typical symptoms, and characteristic laboratory findings to subsequent transfusion of the buffy coat which had been so removed. Group B did not react adversely to either fraction of the donors' blood. Immunologic evidence suggested that it was the leukocytes rather than the platelets in the buffy layer that caused the reactions. Techniques for removing the buffy coat when blood is prepared for transfusion offer a means of preventing the dangerous reactions that occur when patients, after multiple transfusions, become isoimmunized to donor leukocytes.

Unexplained febrile reactions to transfused blood are frequent, accompanying more than 1% of all transfusions. They are distressing and sometimes dangerous. They occur especially in patients who receive multiple transfusions and have been considered of "nonspecific" origin because of inability to demonstrate contamination of the blood, presence of pyrogens, red blood cell incompatibility, or sensitivity to the donor's plasma.

In a systematic study of the occurrence of antileukocyte agglutinins, we and others[1] have been struck by the presence of strong leukoagglutinins in the serums of most patients who had received multiple transfusions and who gave a history of repeated severe febrile transfusion reactions. The white blood cell agglutinins were typical isoantibodies, showing no activity whatsoever against the patient's own leukocytes but clumping a wide range of normal donor leukocytes. In addition, several patients when first seen were able to receive transfusions without any symptoms. No leukoagglutinins were demonstrable in their serums at that time. Subsequently, after they began to have distressing febrile reactions to transfusions, they were found to have developed leukoagglutinins.

The present study was undertaken to explore the possibility that the leukoagglutinins were causally related to the transfusion reactions experienced by these patients.

Methods

To study more definitively the relationship of transfusion reactions to leukoagglutinins, five reaction-prone patients and five control patients were transfused with fractionated blood, one part poor in white blood cells and platelets, the other rich in these elements. After all transfusions the recipient's temperature, other vital signs, white blood cell count with differential, and sometimes platelet count were followed at frequent intervals for at least six hours. One of us stayed at the subject's bedside throughout the reaction to observe symptoms and signs.

Patients.—All subjects were patients under the care of the division of hematology on the wards of the Barnes Hospital group or in the outpatient departments of the Washington University Clinics. Pertinent descriptive data are summarized in table 1.

Five patients (cases 1 to 5) gave a history of repeated severe febrile transfusion reactions. The white blood cell agglutinins in all five of these patients were isoantibodies, i. e., they were completely inactive against the patient's own leukocytes. It is of interest that two of these five patients had no agglutinins against donor platelets and two others had only very weak agglutinins. An indirect Coombs cross-match was performed prior to each transfusion. One patient (case 5) could not be satisfactorily cross-matched with any donor red blood cells. It is interesting that fraction 1 (see below) caused this patient no detectable reaction, and the chromium-tagged red blood cells with which he was transfused were not rapidly destroyed. The

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Read in part before the American Society for Clinical Investigation, Atlantic City, N. J., May 6, 1957.

control patients (cases 6 to 10) were chosen because they were comparably anemic, gave no history of transfusion reactions, had no leukoagglutinin demonstrable in their serums, and were not taking antipyretic, antihistaminic, or steroid medicaments. All patients required transfusion therapy at the time they were studied.

Separation of Donor Blood into Fractions 1 and 2.—The process of separating donor blood into fractions consisted of six steps.

Step 1: From 500 to 550 ml. of blood was drawn from a normal donor into plastic bag A (Ethicon) (fig. 1.), containing 50 ml. of 1.5% disodium ethylene diamine tetra-acetic acid (EDTA) anticoagulant solution. The hematocrit, white blood cell count, and platelet count of the collected donor blood were determined from either (*a*) a sample of the bag's contents obtained after thorough mixing or (*b*) a sample collected from the donor at the conclusion of donation, with the results corrected by multiplying by 500/550 to allow for dilution by the anticoagulant solution. Siliconed tubes were used for all samples.

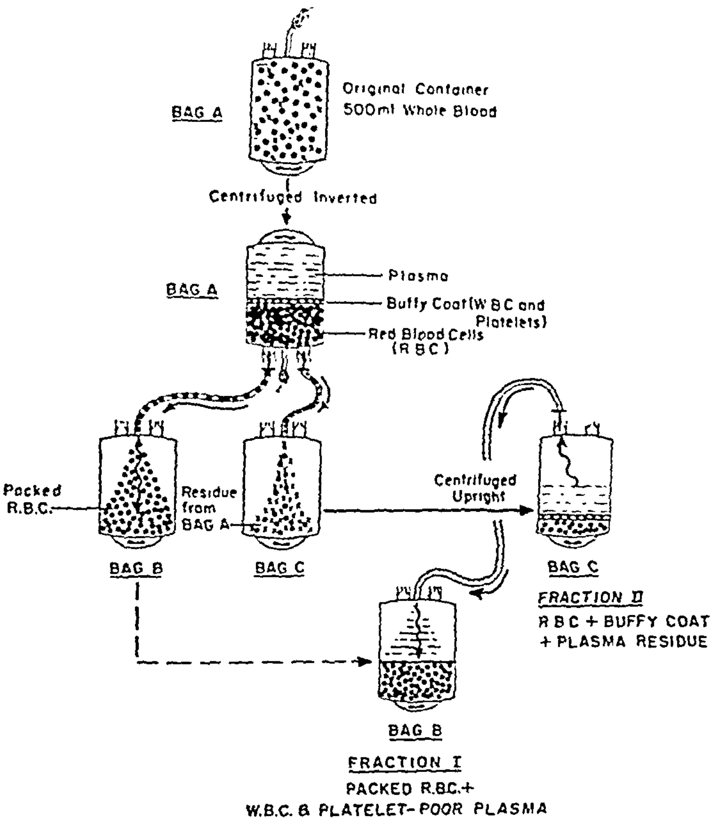

Fig. 1.—*Method for separating* blood into fractions 1 and 2.

Step 2: Bag A was centrifuged in the inverted position at 1,800 rpm for 40 minutes in a refrigerated centrifuge of 26-cm. radius (from the center to the base of the cup in the horizontal position). Bag A was removed from the centrifuge cup with great care to avoid disturbing the white blood cells and platelets (buffy coat) concentrated at the plasma-red blood cell interphase.

Step 3: A dry bag, B, was connected to bag A and then placed on a balance. From 150 to 180 Gm. of packed cells was allowed to flow into bag B. The connecting tubing was clamped just distal to the outlet from bag A.

Step 4: The contents of bag A were thoroughly mixed and allowed to drain into bag C (of 400-ml. capacity). Bag C was centrifuged in the upright position but otherwise exactly as described for bag A.

Step 5: The coupler from bag B was then disengaged from bag A and inserted into one of the outlets of bag C. Approximately 200 ml. of the supernatant plasma was expressed into bag B, and the connecting tubing was clamped just proximal to the coupler. This red blood cell–plasma mixture constituted fraction 1 and contained approximately 75% of the red blood cells, 60% of the plasma, and less than 10% of the white blood cells and platelets originally bled from the donor (see table 2). The connecting tubing was tied close to bag B and cut distal to the knot. The residue remaining in bag C constituted fraction 2 and contained approximately 25% of the red blood cells, 60% of the plasma, and over 90% of the white blood cells and platelets from the original donor blood.

Step 6: The connecting tubing attached to bag C was cleared of plasma by stripping through a tightly closed Kelly clamp protected by rubber guards. The contents of bag C were then thoroughly mixed by vigorous kneading of the limp bag against the hard table top surface. The resuspension required approximately five minutes. The bag was inverted and approximately 5 ml. of the contents was allowed to drain from the tubing (discard), and then a 3-ml. sample was collected in a siliconed tube for determination of hematocrit, white blood cell count, and platelet count. The tubing was then tied close to the coupler and the bag immediately placed in the blood bank storage refrigerator (at 4 C), where it remained until its administration on the following day.

Fraction 1 was thoroughly mixed and a 3-to-5-ml. sample collected from the distal end of the plastic transfusion administration set. The transfusion of fraction 1 was begun immediately thereafter.

Cultures.—No cultures were made of material from fraction 1, which was administered to the recipient within four hours of drawing the blood from the donor. Immediately prior to administration of fraction 2 (which had been stored at 4 C for 16 to 18 hours), a sample of the well-mixed contents was cultured on a blood agar plate and in three tubes of thioglycollate broth. Cultures were incubated at 37 C. All cultures showed no growth and were discarded after 48 hours (blood agar) and 72 hours (thioglycollate broth).

Administration of Transfusions.—In each study, the rate of administration was the same for both fraction 1 and fraction 2 and was approximately

15 ml. per minute. Thus, the time required for administration of fraction 1 ranged from 15 to 30 minutes and for fraction 2 from 5 to 15 minutes.

Hematologic Studies.—White blood cell counts and hematocrit were determined by standard methods as described by Wintrobe.[2] Platelets were counted by the direct method,[3] with use of phase-contrast microscopy. Platelet agglutinins were determined by the method of Harrington.[4] Leukoagglutinins were determined by a method developed by one of us (T. E. B.), modified from the procedure described by Dausset and co-workers.[5] Fifteen milliliters of blood from a normal donor was taken into a siliconed tube containing 0.4 ml. of 5% EDTA anticoagulant. The blood was sedimented for about two hours at refrigerator temperature. The supernatant plasma and buffy coat were removed with a capillary pipette and centrifuged at 200 rpm for 15 minutes. The small white blood cell button at the bottom of the tube was suspended in about 0.75 ml. of 20% bovine albumin to make the white blood cell suspension. About 0.05 ml. of cell suspension was incubated with about 0.10 ml. of test serum for 90 minutes at 37 C. The tests were read under 100× magnification, though significant agglutination was usually readily visible grossly. Testing was completed within eight hours of drawing the blood for the white blood cell preparation. EDTA, in a concentration of 0.4 ml. of 5% EDTA to 8 ml. of serum, was added to all test serums to prevent clotting (and concomitant nonspecific agglutination) of the white blood cell preparation.

Results

Characteristics of Fractions 1 and 2.—Blood cell counts and hematocrit were determined in an aliquot of the original donor blood and of each fraction to demonstrate that there had been no significant loss of white blood cells or platelets and that an appropriate fractionation had been accomplished. The characteristics of the collected donor bloods were not remarkable; hematocrits ranged from 39% to 47%, white blood cell counts from 6,500 to 8,800 per cubic millimeter, and platelet counts from 180,000 to 303,000 per cubic millimeter.

TABLE 1.—*Data on Five Patients with History of Transfusion Reaction and Five Controls*

Case No.*	Age, Yr.	Sex	Diagnosis	Previous Transfusions, No.	Demonstrable Antibodies Against Donor† WBC‡	Demonstrable Antibodies Against Donor† Platelets
1	21	M	Hypoplastic anemia	75	1:128	–
2	52	M	Acute monocytic leukemia	31	1:16	+++
3	30	F	Anemia and thrombocytopenia	85	1:16	Weak
4	32	M	Immunized normal subject	20	1:4	Weak
5	75	M	Primary red blood cell aplasia	56	1:512	–
6	45	F	Iron deficiency anemia	7	–	–
7	20	F	Blood loss anemia	2	–	–
8	66	F	Chronic lymphocytic leukemia	2	–	–
9	72	F	Thymoma; red blood cell aplasia	7	–	–
10	76	M	Chronic lymphocytic leukemia	3	–	–

* Patients in cases 1-5 had history of transfusion reaction; those in cases 6-10 were controls.
† Patient in case 5 was only one with demonstrable antibodies against donor red blood cells.
‡ Antibody titers of subjects' leukoagglutinin against specific normal white blood cells administered during study.

TABLE 2.—*Characteristics of Fractions 1 and 2 of Donor Blood*

	Fraction 1						Fraction 2					
Case No.	Total Volume, Ml.	Hematocrit, %	Volume RBC, Ml.	Volume Plasma, Ml.	WBC ×10³/Cu. Mm.	Platelets ×10³/Cu. Mm.	Total Volume, Ml.	Hematocrit, %	Volume RBC, Ml.	Volume Plasma, Ml.	WBC ×10³/Cu. Mm.	Platelets ×10³/Cu. Mm.
1	228	74.0	169	69	0.05	3.5	85	44.0	37	48	59.40	1,220
2	310	43.5	135	175	0.20	6.5	145	28.2	41	104	16.35	890
3	395	41.0	162	233	1.30	7.5	165	23.0	38	127	15.90	700
4	300	64.0	192	108	1.20	8.8	146	41.0	60	86	28.50	870
5	280	60.5	170	110	1.20	10.0	238	43.0	103	135	22.20	663
6	400	53.0	212	188	0.75	29.0	180	32.0	58	122	25.00	1,035
7	420	44.0	185	235	1.65	12.5	148	36.5	54	94	21.90	590
8	343	50.0	172	171	1.30	21.0	142	44.0	62	80	19.95	705
9	421	42.0	177	244	0.36	8.0	163	42.0	68	95	30.90	795
10	414	49.0	203	211	0.50	11.0	162	40.0	65	97	23.90	545

The characteristics of fractions 1 and 2 are summarized in table 2. It will be noted that the sum of the volume of fraction 1 plus the volume of fraction 2 does not always equal 550-600 ml. A total of approximately 20 ml. was removed in sampling during the various stages of preparation. In addition, in order to intensify the contrast between fractions 1 and 2, on several occasions (transfusions to patients in cases 1, 2, and 3) up to 40 ml. of packed cells was discarded at the conclusion of step 3. In three instances (transfusions to patients in cases 1, 4, and 5), in order to diminish the total volume of the fractions, up to 150 ml. of plasma was discarded during step 6. It is evident that there was considerable variation among the different donor bloods in the efficiency of concentration of the buffy coat elements into fraction 2. The reasons for these variations were not always apparent. Preliminary studies showed that, if more than 75% of the packed red blood cells were withdrawn after centrifugation under the conditions described in the section on methods, the white blood cell count of fraction 1 rose sharply. This indicated that, although the lower margin of the buffy coat appeared to be discretely defined, a significant gradient of white blood cells existed in the upper quarter of the packed red blood cell mass. Although every effort was made to standardize the various processing procedures, minor differences in technique undoubtedly influenced the effectiveness of the buffy coat separation. In addition, a strong impression was gained that donor differences played a significant role, some donor bloods apparently lending themselves to buffy coat separation more readily than others. More than 90% of the donor blood's white cells were present in fraction 2 in 7 out of the 10 studies (cases 1, 2, 4, 5, 6, 9, and 10). In the remaining three studies (cases 3, 7, and 8) fraction 2 contained 80 to 86% of the white blood cells. Effective separation of platelets was more consistently accomplished, with more than 95% of the original platelets present in fraction 2 in every instance.

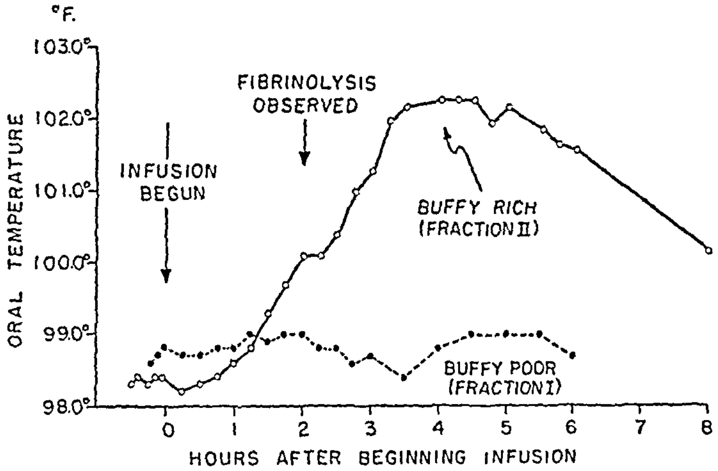

Fig. 2.—Reaction of patient in case 1 to infusion of fractions 1 and 2.

Response to Transfusions.—Figures 2 through 6 show the oral temperature curves of the patients in cases 1 through 5, respectively, after they had received fractionated blood. None of these subjects experienced symptoms of any kind after infusion of fraction 1. In none was there a rise above the usual daily temperature, nor was there any significant change in white blood cell or differential counts. After administration of fraction 2, however, all five patients had marked febrile and symptomatic responses, the important features of which will be summarized briefly for each patient. All patients commented that the reactions were exactly like their usual transfusion reactions except that some of the experimental reactions were milder than those to which the patient was accustomed.

Case 1 (fig. 2).—Fifty-nine minutes after the infusion of fraction 2 was begun, this man experienced a feeling of chilliness which did not, however, progress to frank rigor (in contrast to the other four patients). His oral temperature reached a peak of 102.3 F (39 C), and he experienced marked apathy and prostration persisting for approximately five hours. Note also that blood drawn from the subject two *hours after beginning the transfusion showed complete spontaneous fibrinolysis (fig. 2).*

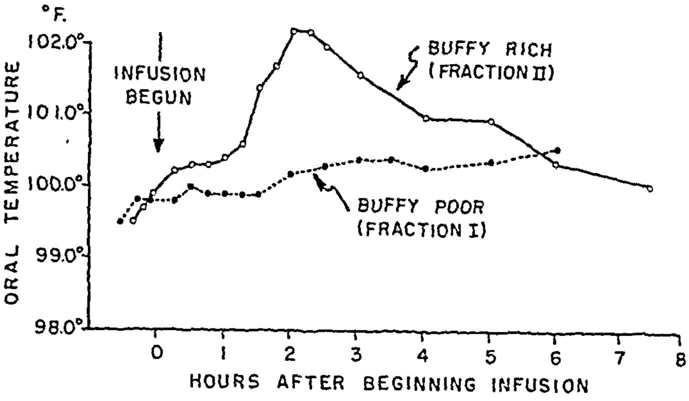

Fig. 3.—Reaction of patient in case 2 to infusion of fractions 1 and 2.

Case 2 (fig. 3).—Seventy-eight minutes after the infusion of fraction 2 was begun, this man experienced a shaking chill lasting for 16 minutes. The chill was followed by a rise of oral temperature to 102.2 F (39 C). Minor symptoms of weakness and apathy persisted for approximately 45 minutes.

Case 3 (fig. 4).—Sixty-two minutes after the infusion of fraction 2 was begun, this woman experienced a shaking chill lasting for 21 minutes, followed by headache, backache, moderate weakness, and exhaustion continuing during the ensuing one to two hours. It is interesting that, although this patient had a rise in oral temperature of 2.4 F (1.3 C) above her baseline level, the peak was only to 100.3 F (38 C). Two factors may have accounted for the less marked temperature elevation observed in this patient. From table 2 it can be seen that much the poorest separation of buffy coat between the two fractions was accomplished in this instance. In addition, the patient was receiving 15 mg. of prednisone (Meticorten) daily at the time the study was performed (in contrast to the other four patients and to the five control subjects). We have observed in other experiments, not in-

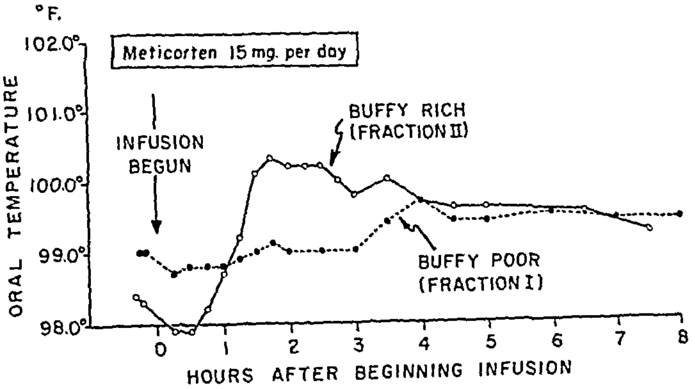

Fig. 4.—Reaction of patient in case 3 to infusion of fractions 1 and 2.

cluded in this report, that prednisone is probably able to diminish the febrile response in transfusion reactions caused by sensitivity to buffy coat.

Case 4 (fig. 5).—Fifty-five minutes after the infusion of fraction 2 was begun, this man experienced a shaking chill lasting 22 minutes, followed by a rise in oral temperature to 101.2 F (38.5 C). Headache, irritability, and marked lassitude persisted for five hours. Incidentally, this subject is a healthy laboratory worker who was deliberately isoimmunized to white blood cells to permit more detailed study of the relationship of leukoagglutinins to transfusion reactions.

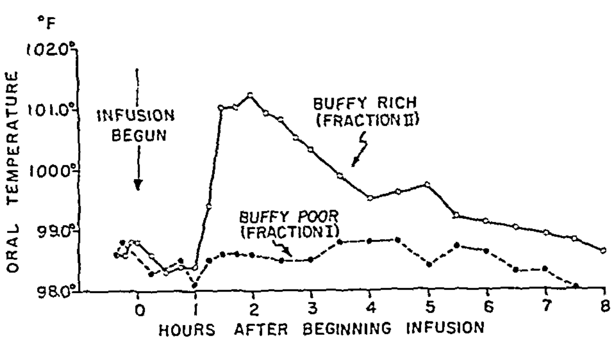

Fig. 5.—Reaction of patient in case 4 to infusion of fractions 1 and 2.

Case 5 (fig. 6).—Fifty-two minutes after the infusion of fraction 2 was begun, this seriously ill 75-year-old man experienced a severe shaking chill lasting 52 minutes, a rise in oral temperature to 102.4 F (39.1 C), cyanosis, gallop rhythm, markedly impaired mentation with disorientation and amnesia, and a profound prostration lasting about nine hours. This life-threatening episode represented a typical febrile transfusion reaction for the patient.

Hematological Observations.—The patient in case 2, who had acute monocytic leukemia with a white blood cell count of 132,000 per cubic millimeter consisting of more than 90% blast cells, was the only patient who did not show a marked fall in neutrophil count within 15 minutes of the beginning of the infusion of fraction 2. All five patients later showed a marked rise in neutrophil leukocytes above control levels, maximum values being reached within two to five hours after transfusion.

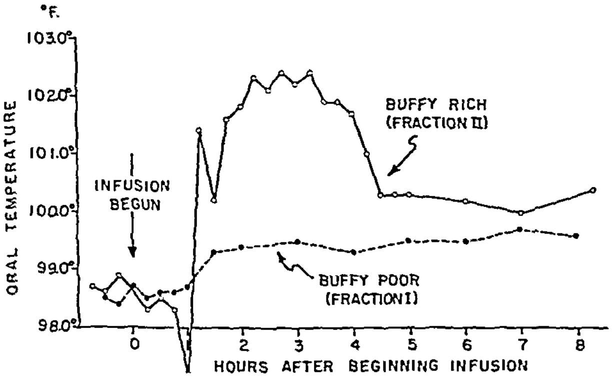

Fig. 6.—Reaction of patient in case 5 to infusion of fractions 1 and 2.

The occurrence of fibrinolysis in one patient (case 2) has already been mentioned; we have observed this phenomenon in at least one other similar study, not included in the present series.

Pattern of the Reaction.—There was a remarkable consistency in the pattern of the reactions which followed the transfusion of fraction 2 to this group of patients. These always consisted of (1) an immediate reaction, (2) a latent period, and (3) a delayed reaction. The characteristics may be summarized as follows: The immediate reaction was transient, with onset within five minutes of the beginning of the transfusion, and consisted of flush, palpitation, tachycardia, cough, a "thick choking" feeling in the chest, and neutropenia. The latent period occupied the interval from 15 to 60 minutes after the beginning of the transfusion. During this time, the patients all felt entirely well. The delayed reaction had its onset approximately one hour after the beginning of the transfusion. This phase was heralded by a rise in the diastolic blood pressure and the onset of headache and chilliness with progression to frank rigor, followed by a rapid rise in temperature. Apathy, irritability, probably impaired mentation, and prostration persisted for several hours thereafter. A neutrophil leukocytosis with a marked shift to the left reached its peak two to five hours after the beginning of the infusion.

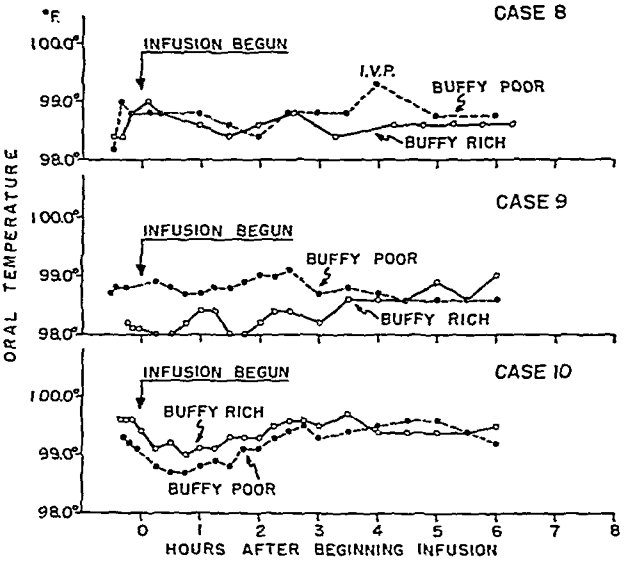

Fig. 7.—Reactions of three control patients (cases 8, 9, and 10) to infusion of fractions 1 and 2.

Control Subjects.—Figure 7 shows the temperature curves of three of the five control patients after they received fractionated blood. The other two control subjects showed entirely similar responses. There was no rise in temperature, and no control patient had symptoms, physical signs, leukopenia, or leukocytosis after receiving either fraction 1 or fraction 2.

Comment

These studies strongly suggest that isosensitization to elements of the buffy coat is causally related to the recurring febrile transfusion reactions experienced by some patients who have received multiple transfusions. Human donors' leukocytes appear to be effective antigens, and it is likely that useful information will evolve from the application of modern immunological techniques to the study of normal and diseased white blood cells. We believe that sensitivity to white blood cells is more important than sensitivity to platelets as a cause of febrile reactions, because the reactions correlate consistently with the presence of leukoagglutinins in the recipient's serum but only erratically with the presence of platelet agglutinins.

Dameshek and Neber [6] have shown that sensitization to some constituent of donor plasma may occasionally provoke febrile reactions. In two of their patients the causal relationship of infusion of the donor's plasma to the patient's reaction was unquestionably established when the infusion of as little as 9 to 20 ml. of centrifuged plasma (presumably free of platelets and white blood cells) was followed by chills and fever. In several other patients who had received multiple transfusions, provocation of reactions by the infusion of centrifuged plasma was not attempted, but sensitivity to plasma was presumed to be the cause of this when it was shown that the administration of thoroughly washed red blood cells was not accompanied by the usual chills and fever. It may be wondered whether certain of these latter patients were actually isosensitized to the buffy coat, since, in our xperience, the process of washing red blood cells ay result in the removal of more than 80% of the buffy coat in addition to over 98% of the plasma.

The complete absence of fever and symptoms in the five control subjects in the present study suggests that the febrile reactions observed in the first five patients were not caused by a nonspecific febrile effect of stored white blood cell concentrates nor by contamination of fraction 2 with bacterial pyrogens or with cold-growing bacteria which were not detected in the cultures incubated at 37 C.

To establish that the processing and storage of white blood cells are not essential to the production of febrile reactions in sensitized patients, one patient (case 4) was transfused by siliconed syringe technique with blood containing leukocytes to which he was sensitive. These white blood cells were out of the donor's circulation for less than one minute before being infused into the recipient. Their injection resulted in a typical severe reaction, with shaking chills and fever.

The patients in cases 1 and 3, who were accustomed to receive a pint of blood on two successive days about once monthly, reported that they almost invariably had a much less severe reaction to the second pint than to the first. This observation was somewhat unexpected, because their leukoagglutinins were present in great excess of the number of transfused white blood cells and the titers of the leukoagglutinins were not significantly decreased by the initial transfusion. The tendency to have a less severe reaction on the day following a severe transfusion reaction is suggestive of the phenomenon of tolerance seen with successive injections of bacterial pyrogen. Both phenomena develop rapidly and are of short duration. Tolerance to bacterial pyrogens is unrelated to the development or the saturation of antibodies. The composition of fractions 1 and 2 and the order in which they were administered in the present experiments were designed with the possibility of tolerance in mind. It is apparent that the absence of reactions following the administration of fraction 1 and their regular occurrence following administration of fraction 2 constitute strong evidence for a primary causative role for the elements of the buffy coat, as opposed to the red blood cells and plasma.

The febrile transfusion reactions exhibited by patients with buffy coat sensitivity show many similarities to the reaction seen in patients following injection of bacterial pyrogen. Thus, there is the possibility that tolerance develops to repeated leukocyte-leukoagglutinin reactions just as it does to repeated injections of bacterial pyrogen. With both reactions, there is a period of latency of approximately one hour during which the patient has a sense of complete well-being before the onset of chills and fever. The symptoms and signs in both reactions are alike. Fibrinolysis may occur in both syndromes. Changes in the white blood cell count follow an identical pattern in both (immediate transient neutropenia followed later by leukocytosis with a shift to the left). Finally, both syndromes vary sharply in severity with the amount (dose) of provocative substance (white blood cells or pyrogen) administered. Stetson [7] has pointed out that the effect of intravenous injection of bacterial pyrogen in normal rabbits is very similar to the effect of intravenous administration of tuberculin in specifically hypersensitive rabbits. He advances the hypothesis that some basic mechanism may be common to both reactions. Jandl [8] has recently pointed out the similarity between reactions to bacterial pyrogen and the reactions which follow immune hemolysis in man. The present study of febrile transfusion reactions in patients with buffy coat sensitivity would seem to be further evidence of a close relationship between the basic mechanisms underlying reactions to bacterial pyrogens and reactions associated with various hypersensitivity states.

Some of the symptoms and signs of the reactions secondary to buffy coat sensitivity can probably be suppressed by the use of such drugs as antipyretics, antihistaminics, or adrenal steroids. However, since it is known that pyrogens (and by analogy leukocytes given to a sensitive recipient) are harmful, that they produce diffuse capillary and endothelial damage, impair function of vital organs, and cause necrosis in tumors,[9] it is likely that simple suppression of symptoms may be unwise. The reactions can be prevented in a more direct way by removing leukocytes and platelets from the blood to be transfused. Buffy coat–poor blood can be prepared in the manner which has been described for these investigations. An alternate method, in which the red blood cells are sedimented in dextran (mean molecular weight approximately 140,000), is currently undergoing clinical trial by one of us (H. C.). This procedure, which does not require centrifugation, has the advantages of technical simplicity, effective removal of over 95% of the buffy coat, and economy of donor red blood cells, more than 98% being available for transfusion in contrast to 70-75% by the method of centrifugation. Buffy coat–poor transfusions are being successfully employed in the management of several seriously ill reaction-prone patients.

Summary and Conclusions

Donor leukocytes are effective antigens. Patients who receive multiple blood transfusions may become isoimmunized to the leukocytes and probably also the platelets in the transfused blood. Isoantibodies against white blood cells and probably against platelets are a common cause of repeated febrile transfusion reactions. The reactions show a striking resemblance to reactions seen in patients after the injection of bacterial pyrogen. The reactions, which can be severe and occasionally threatening to life, can be prevented by removal of the buffy coat prior to administration of the blood.

600 S. Kingshighway (10) (Dr. Chaplin).

These studies were supported in part by grants from the National Cancer Institute and the National Heart Institute.

We are indebted to Dr. Wilbur Mattison for performing the platelet agglutinin tests included in this report.

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Management of Bleeding Diseases.—In general, whole blood is used to correct the anemia of acute or chronic blood loss in the bleeding diseases and whole blood or plasma may be used to prevent shock. Plasma is also used to replace needed coagulation constituents. Fresh whole blood or plasma, fresh frozen plasma, or fresh lyophilized plasma is desirable in the treatment of antihemophilic globulin (AHG) deficiency, labile factor deficiency and fibrinolytic states. Platelet-rich plasma or fresh plasma collected in silicone-coated or plastic containers, or direct transfusion, may be helpful in patients with thrombocytopenia. Bank blood, or plasma (not more than 30 days old), is indicated in plasma thromboplastin component (PTC) and plasma thromboplastin antecedent (PTA) deficiency, stable factor deficiency, hypoprothrombinemia, afibrinogenemia and fibrinogenopenia. Cohn Fraction I has been employed successfully in AHG deficiency and afibrinogenemia (or fibrinogenopenia). Vitamin K has proved to be effective in prothrombin deficiency due to insufficient dietary intake or absorption of vitamin K. Vitamin K_1 and K_1 oxide are also extremely valuable in the treatment of the hypoprothrombinemia of Dicumarol administration. ACTH, cortisone and related compounds have considerable importance in the management of the acute phase of idiopathic and symptomatic thrombocytopenic purpuras, some of the non-thrombocytopenic purpuras and excessive fibrinolysis. Splenectomy may be indicated in idiopathic thrombocytopenic purpura resistant to steroid therapy. Bed rest with local pressure, topical application of coagulants, or other local hemostatic measures should always be used, where applicable, to help in controlling active bleeding of the affected part or parts.—A. J. Johnson, M.D., The Management of Acute Episodes in Patients with Bleeding Diseases, *The Medical Clinics of North America*, May, 1957.

CLINICAL NOTES

A PORTABLE CHAIR-SCALE FOR HOSPITAL USE

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and
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A patient's weight record is an important source of clinical information. Like the pulse and temperature curve, the appraisal of a weight record can be of tremendous diagnostic aid. In the management of congestive heart failure, kidney and endocrine disturbances, electrolytic and nutritional problems, and many postoperative states, a daily weight record is often invaluable.

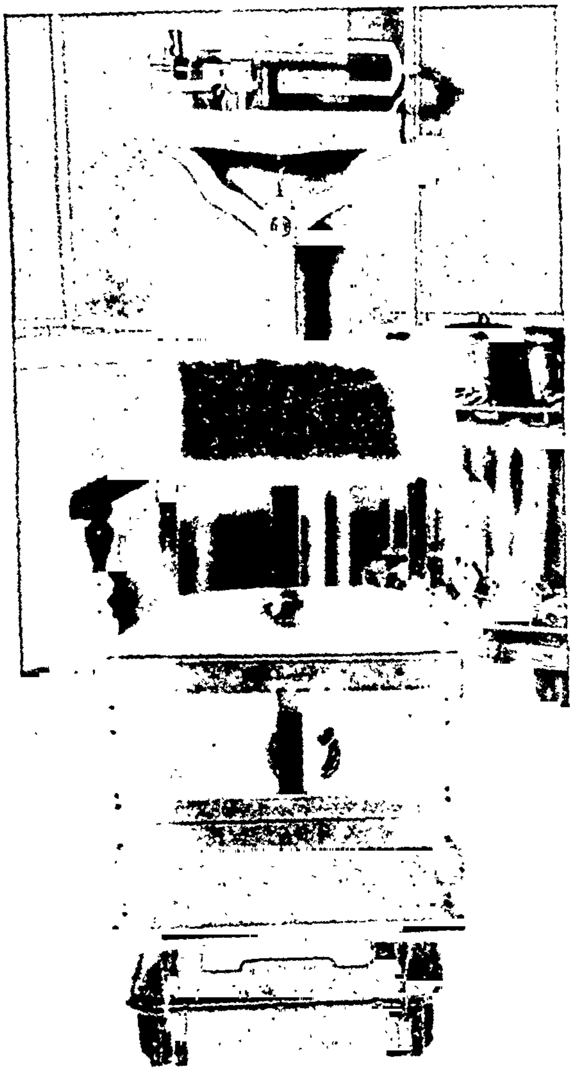

Fig. 1.—Portable chair-scale.

For a variety of reasons, unfortunately, daily fluctuations in body weight are too often neglected or reported haphazardly. In our experience, the most important reason daily weight records are not available in an average hospital ward is the absence of a convenient, practical method for weighing patients. In the average busy hospital, the technique for weighing patients is not sufficiently organized nor is its importance emphasized. As a result, the physician's request to weigh a patient daily tends to become a chore and is relegated to the last order of business. Actually, the procedure for weighing patients should be less time consuming than taking temperature readings. Various complicated scales have been designed to weigh patients confined to bed.[1] Most of these arrangements, however, are expensive and unwieldly and consequently not available to the average hospital. The household bathroom scale is too unreliable and generally not practical for the patient in a hospital bed.

It is our purpose to describe an inexpensive, portable scale for hospital use (fig. 1). A seriously ill patient is usually able to sit but too weak to stand. This fact initiated the development of the chair-scale. An upright beam scale (fig. 2, *B*) is mounted on a platform (fig. 2, *H*) constructed with ¾-in. plywood, measuring approximately 30 by 20 in. This platform is made mobile by the insertion of a sturdy ball-bearing rubber caster at each corner (fig. 2, *E*). Another plywood base, measuring 23 by 20 in.

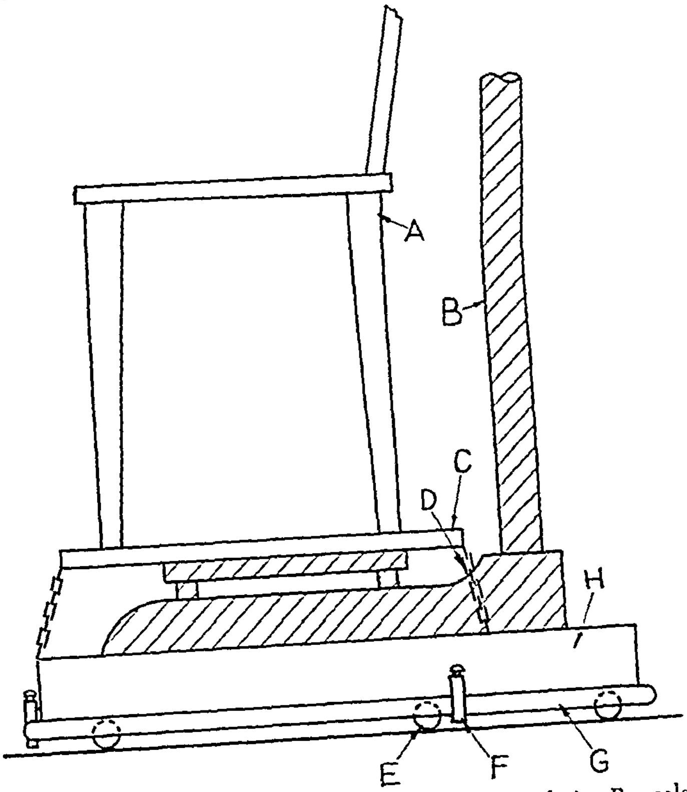

Fig. 2.—Sketch of chair-scale—side view. *A*, chair; *B*, scale; *C*, platform mounted on scale; *D*, chain from platform to base; *E*, rubber caster; *F*, door stop; *G*, sideboard attached to platform base, *H*, on which scale rests.

From the Department of Medicine, Staten Island Hospital.

(fig. 2, *C*) is bolted to the platform of the scale. Excess motion of the scale platform base is restricted by chains at each side (fig. 2, *D*). To prevent rolling while the chair-scale is in use, friction door brakes or stops (fig. 2, *F*) are mounted on sideboards (fig. 2, *G*). The brakes are conveniently manipulated by foot. The balance-control screw of the scale should be adjusted to compensate for the added weight of the chair and platform. Aside from the chair and the scale, this entire unit can be assembled in a carpenter shop at a cost of less than $5.

The chair-scale is comfortable for the patient and is remarkably simple to operate. It is rolled to the bedside and the foot stops are applied. The patient is then assisted to, or lifted into, the armchair, where he sits comfortably for a few moments while the weight is recorded. This procedure is carried out routinely on the ward every morning at approximately the same time. In an open ward of 20 patients, less than 30 minutes are consumed by this method. This technique should be applicable to most hospital patients except those confined to the supine or prone position. For over two years this scale arrangement has been an integral part of the ward routine of this hospital.

Summary

An inexpensive chair-scale has been designed for weighing the majority of hospital patients. This scale is portable, comfortable, and easy to manipulate. It is important to establish an organized routine for weighing hospital patients.

100 Central Ave. (1) (Dr. Silverman).

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SIGMOIDOUTERINE FISTULA COMPLICATING DIVERTICULITIS

REPORT OF A CASE

Melvin A. Smalley, M.D., Virgil LoRusso, M.D.
and
J. Elmer O'Brien, M.D., Erie, Pa.

In a recent case report and review of the literature, Franco and Clough[1] noted reports, including their own, of 75 cases of enterouterine fistula. These cases occurred following (1) carcinoma of either the intestine or uterus with subsequent invasion of the other structure and communication of the lumina, (2) rupture of the uterus (either spontaneous or produced during labor), or (3) inflammatory disease (such as pathological puerperium and appendicular abscess) causing peritonitis. Under this last heading, diverticulitis with abscess formation may be included.

Only two cases of sigmoidouterine fistula complicating diverticulitis have been reported prior to the time of this writing, one by Noecker,[2] in 1929, and another by Johnston and Stubbs,[3] in 1955. The advised treatment consists of preliminary preparation of the patient with antibiotics, sterilization of the intestine, diet, and transfusions. Johnston and Stubbs felt that, in the absence of infection and obstruction, primary resection of the colon should be performed. Franco and Clough felt that, in the absence of considerable reaction and inflammation or an opening in the intestine too large to be closed effectively, the involved viscera could be separated and the openings sutured.

A 76-year-old female was admitted to the surgical service of St. Vincent's Hospital on July 23, 1956, complaining of constant discharge of liquid feces per vaginam for the previous seven and one-half weeks. The patient stated that while she was lying quietly in bed on June 1, 1956, she heard a peculiar "snapping" noise that seemed to emanate from her pelvis; she passed a small amount of mucus vaginally, and, within a few minutes, the discharge of liquid feces began. The patient had been seen in medical clinic, where discharge of feces from the cervical os was observed.

The patient had been followed in the medical and diabetic clinic for a number of years. Her medical history included diabetes mellitus, which had been diagnosed 12 years previously; at the time of admission she was taking 35 units of isophane insulin daily. Due to hypertensive and arteriosclerotic heart disease, the patient had required digitalis daily for two years. A substernal goiter had been present for 18 years, apparently without evidence of recent thyroid activity. The patient had three children; the last menstrual period had been in 1936; no vaginal bleeding had occurred since that time. No prior surgical procedure had been performed. The patient denied all symptoms referable to the gastrointestinal and urinary tracts. She had had no loss of weight; she had had no pain at any time.

Physical examination on admission disclosed a thin, elderly, cooperative female, who appeared chronically ill. There were funduscopic changes consistent with diabetes and arteriosclerosis; examination of the head and neck was otherwise not remarkable. The chest was symmetrical; the lungs were clear and resonant throughout. The heart tones were of good quality, rhythm was regular, and a blowing systolic murmur was heard over the entire precordium. The abdomen was obese and soft; the liver edge was palpable 4 cm. below the right costal margin.

Chief Resident in Surgery (Dr. Smalley); Attending Surgeon (Dr. LoRusso); and Chief, Surgical Service (Dr. O'Brien), St. Vincent's Hospital.

No other viscera or masses were palpable, and no tenderness was elicited. Pelvic examination disclosed brown fecal material in the vagina and mild erosion of the cervix. Rectal examination disclosed no pathology.

Careful examination of the vagina, after the feces had been cleaned out, combined with proctoscopic examination and the use of methylene blue, failed to demonstrate any fistulous tract between the rectum and vagina. X-ray, after a barium enema on July 27, showed sigmoid diverticulitis, and in an oblique view (fig. 1) the presence of a tract leading to a nearby cavity was demonstrated. A hysterosalpingogram made on July 30 confirmed the impression that the nearby cavity was the uterine cavity; chloriodized oil (Iodochlorol) injected into the uterus under the fluoroscope appeared in the sigmoid within 10 seconds; x-ray (fig. 2) again showed the sigmoid diverticulitis, fistulous tract, and uterine cavity.

After a medical staff consultation, the patient's cardiac and diabetic status was improved, and she was prepared for operation. Laparotomy was done on Aug. 2. A fistulous tract 5 cm. in length and 2 cm. in diameter was found extending from the antimesenteric border of the midsigmoid to the fundus of the uterus and entering the uterine fundus at a point 1 cm. superior to the entrance of the right fallopian tube. Adhesions surrounding the fistula involved the sigmoid, the uterus, and the bladder. No acute inflammatory process was present. Further examination of the abdomen revealed the absence of gross pathology in the liver, gallbladder, stomach, small intestine, omentum, mesentery, kidneys, and colon as far as the sigmoid. There were no palpable iliac or aortic lymph nodes. Multiple small sigmoid diverticula were noted.

Because of the patient's age, heart disease, diabetes, and substernal goiter and her expressed fear of a colostomy, and in view of the absence of acute inflammation and the small (2-cm.) diameter of the opening of the tract in the intestine, it was decided to attempt resection of the fistulous tract and closure of the intestine in accord with the opinion of Franco and Clough. Accordingly, the adhesions between bladder and sigmoid were separated, and, upon careful dissection of the sigmoid-uterine adhesions, the fistula was entirely exposed. A negligible amount of bleeding was encountered. The fistulous tract, including a small amount of necrotic tissue at each end, was removed. The opening in the sigmoid was closed transversely in two layers. A probe was passed through the uterine opening and the cervical os and was immediately recovered the vagina. The opening in the uterus was closed with chro absorbable surgical sutures.

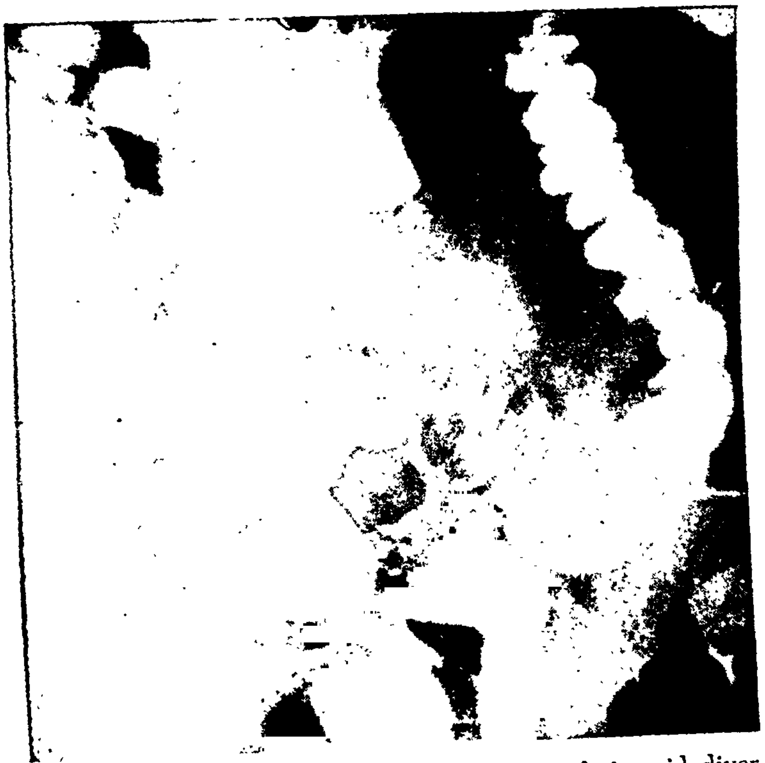

Fig. 1.—Roentgenogram showing evidence of sigmoid diverticulitis after barium enema had been given.

Postoperatively, the patient's course was remarkably smo She began to have normal stools on the third postoperative d On the eighth postoperative day, she developed a mild cyst Complete urologic studies failed to disclose evidence of a other pathology, and the cystitis cleared within a few da After the medical consultant had placed her on an outpatien regimen consisting of diet, insulin, and digitalis, the patient wa discharged three weeks after operation.

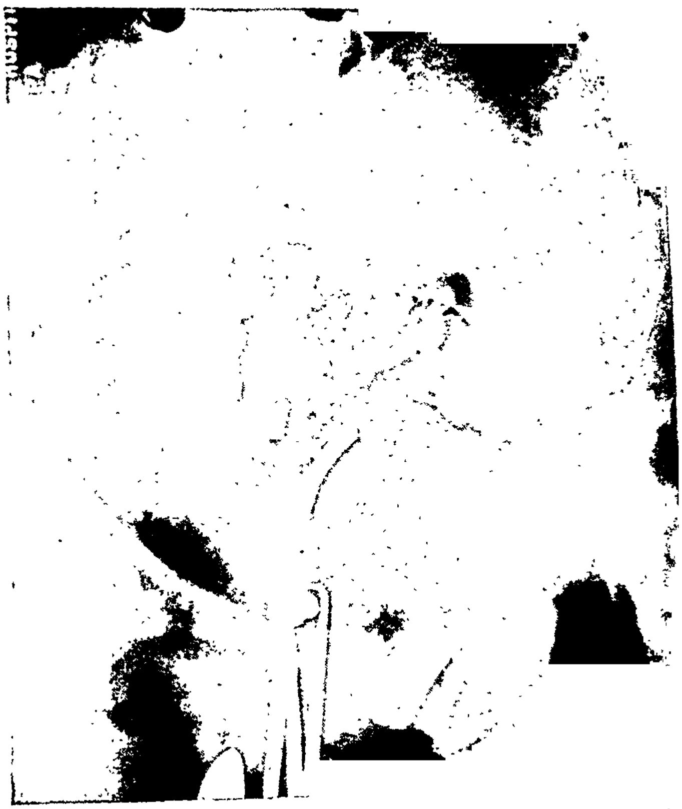

Fig. 2.—Roentgenogram showing sigmoid diverticulitis, fistulous tract, and uterine cavity.

The patient was subsequently seen at periodic intervals. Sh has had no symptoms or signs of any recurrence of the diseas which brought her into the hospital. Physical examination, including pelvic and rectal examinations, has revealed no evidence of pathology. The mucous membrane of the sigmoid an the cervix are normal in appearance. The patient has bee doing her normal housework and has had no symptoms referabl to the gastrointestinal or urinary tracts. She was last seen on year after operation.

Summary

A case of sigmoidouterine fistula complicating diver ticulitis, complicated by the presence of diabetes, wa successfully treated by means of excision of the fistu lous tract and closure of the openings in the sigmoi and uterus. Reports of two cases of sigmoidouterin fistula have previously appeared in the literature.

2225 Liberty St. (Dr. L. Russo).

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TREATMENT OF AMEBIASIS WITH CAMOFORM

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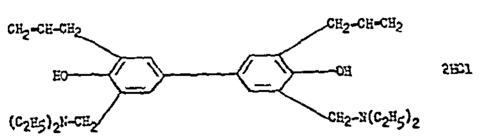
Laboratory evidence indicates that Camoform [biallylamicol, PAA-701, SN 6771, 6,6′-diallyl-α, α′-bis-(diethylamino)-4,4′-bi-o-cresol dihydrochloride] is effective against Entamoeba histolytica in vitro. Administered orally to animals infected with E. histolytica, the drug is effective against intestinal amebiasis in rats and dogs, and amebic hepatitis in hamsters. Prophylactic oral administration of the drug confers protection against hepatic and pulmonary amebiasis in hamsters. The drug is also relatively nontoxic in animals after short-term administration, is rapidly absorbed, is stored in high concentration in the liver and lung (the most frequent sites of extraintestinal amebiasis), and is slowly excreted largely by way of the bile (resulting in prolonged fecal levels).[1]



Structural formula of Camoform.

Clinically it has been shown in a previous paper[2] to produce a rapid therapeutic response and cure in 82 of 85 patients with acute amebic colitis. Among 145 chronic cases, 112 were completely cured with one course of treatment, and 29 of the remaining 33 were cured with a second course of treatment. Hoekenga and Batterton[3] treated 10 patients with acute dysentery and 10 others with relatively asymptomatic infections. An 85% rate of apparent cure was obtained with a single course of treatment, and two of the three in whom treatment failed were cured when the treatment was repeated. Rapid clinical improvement was observed. The drug was well tolerated in each of these studies. Barrios[4] treated 16 cases of active amebic dysentery with apparent cure in each patient.

Milloy[5] administered Camoform to 36 patients suffering from chronic amebiasis who had previously been untreated. Twenty-three responded to therapy, six were unimproved, and in seven others treatment was stopped owing to aggravation of existing abdominal symptoms. Of 28 patients previously treated with other drugs, 5 did better on therapy with Camoform than with other drugs, in 12 the response was about the same, and 11 were unimproved. He concluded: "Camoform is especially advantageous in the treatment of chronic amebiasis as it can be given in small dosage over long periods of time without untoward symptoms."

In East Africa, De Mello and De Mello[6] treated 92 patients suffering from acute and chronic amebiasis, including 3 patients with amebic hepatitis. The symptoms were rapidly alleviated, and Camoform was effective in clearing the intestines of amebas and cysts. Extraintestinal lesions also showed a good response. The authors recommend its use "as a prophylactic agent for dysenteric contacts." In India, Majumbar[7] obtained successful clinical and parasitological cure in 12 of 13 cases of amebiasis. In Egypt, Shafei[8] cured 10 of 15 patients with one course of treatment and a further 2 patients with a second course. Basmadji[9] in Iran treated two groups of patients. The first consisted of 14 patients, 72% of whom had negative stools 15 days after treatment, 70% after one month and 50% after three months. In a second series of 14 patients, all had negative stools five days after treatment, 64.3% after one month, and 50% after three months.

Material and Methods

Thirty-nine patients suffering from chronic amebic dysentery confirmed by stool examination and one patient with pulmonary amebiasis were treated in this study. A dosage varying between 250 and 500 mg. of Camoform (1 to 2 tablets) three times a day was administered with meals. The drug was given with meals since administration afterwards had previously been found to lead to gastric intolerance. The course of therapy was continued for five days (15 doses). In addition to these 40 confirmed cases of amebiasis, 22 cases of dysentery diagnosed clinically as amebiasis but not confirmed by the isolation of E. histolytica were treated.

Results

In all cases there was symptomatic cure and the patient remained well over the subsequent several months of observation. All cases became free of E. histolytica after one course of treatment and there were no immediate relapses. It was also found that Camoform had a pronounced effect on E. coli, Chilomastix mesnili, Indolimax nana, Giardia lamblia, and Trichomonas hominis. After the course of treatment the occurrence of these protozoa was significantly reduced.

Treatment of a case of pulmonary amebiasis resulted in rapid termination of symptoms and radiologic and parasitological cure.

Report of a Case

The patient was a 60-year-old merchant with a history of an attack of colitis five years previously which had been cured in eight days without medical treatment. The sudden onset of a cough associated with fever and nausea were the reasons for his seeking medical attention. On the second day of observation he developed a brown expectoration and chest pain. On the third day he had the sensation of a foreign body in his chest. An x-ray showed an abscess, and E. histolytica was isolated from his sputum. Amebic pulmonary abscess was diagnosed and 750 mg. of Camoform was given daily for six days together with four injections of 400,000 units of penicillin. On the fourth day the general malaise, fever, and cough diminished and only a slight cough remained on the sixth day. The patient felt well enough to leave his bed the following day, and his general condition was excellent. Two subsequent sputum analyses on the 10th and 13th days from the beginning of the illness were negative for E. histolytica, and an x-ray taken on the 29th day showed that the cavitation caused by the abscess had disappeared and appeared to be filled with sclerous tissue. The patient was seen again after two and one-half months, at which time he was in good condition.

Side-effects

Camoform was well tolerated by the majority of the patients, although a few suffered from occasional nausea, vomiting, and abdominal distress. The symptoms were not sufficiently severe to merit discontinuance of treatment in any patient and the side-effects subsided on completion of the course of treatment.

Summary

Forty patients with confirmed cases of amebiasis, including one patient with pulmonary amebiasis, were treated with Camoform with symptomatic and parasitological cure. No relapses occurred in the subsequent several months of follow-up. Side-effects were minimal and were in no cases sufficient to discontinue treatment.

This paper was translated from the original by Dr. Eug H. Payne, 656 Van Dyke St., Detroit 14.

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CLINICAL EVALUATION OF ZOXAZOLAMINE (FLEXIN) IN CHILDREN WITH CEREBRAL PALSY

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and
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In an attempt to study the effect of zoxazolamine (Flexin) on children with cerebral palsy, we deemed a purely objective method of evaluation to be most advisable. Ninety-five children were selected at random, of whom 68 were spastics and 27 were athetoids. The diagnosis had been made by one or both of us. The youngest child was 2 years and 1 month of age and the oldest was 17 years. There was one adult, 28 years of age. The mean age was 8 years and 1 month (table 1).

There was a random distribution between the experimental and control groups with respect to intelligence levels, bracing, seizures, and whether the child was on therapy at the time of evaluation. Since these factors were randomly distributed, they were not considered to be of significance in the comparison of the experimental and control groups. If the child was on therapy, no effort was made to improve the test areas per se.

The drug was tested for its effect on the stretch reflex, i. e., the point at which the stretch reflex was elicited, and range of motion, including passive motion, active motion, and motion against resistance (or the ability to extend the flexed knee against weight). Weights of 3 lb. were used for children up to 5 years of age and of 5 lb. for those over 5. These tests were carried out on the biceps, triceps, quadriceps, and hamstring muscles, with the exception of motion against resistance, which was limited to the quadriceps. A specially designed goniometer, which recorded and marked the maximum point of motion, was used for the measurements.

The children were further evaluated as to their ability to perform an already learned task in a given length of time. These activities consisted of removin

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as many rings as possible from a peg in 60 seconds with each hand and with both hands and of putting as many blocks as possible in a box in 60 seconds with each hand and with both hands. Those who were ambulatory were checked as to the number of stairs they were able to climb in 60 seconds; in this functional test each child served as his own control.

The muscles of speech articulation were tested by determining the number of tongue-tip elevations, tongue lateralizations, jaw closures, and lip closures the child could perform in 10 seconds. Each child was evaluated in the areas outlined before medication, after one week of medication, and after four weeks of medication.

Drug Dosage

All children except those receiving the placebo, regardless of age or weight, were given one 250-mg. tablet of zoxazolamine orally three times daily with meals. This was continued for one week. Because of the early influx of complaints about dizziness, hypotonia, and rash among the smaller children, the dosage for all those from 3 to 5 years of age was decreased to 125 mg. three times daily with meals.

Table 1.—*Type of Cerebral Palsy, Drug Administered, and Ages of Ninety-five Children in Whom Zoxazolamine Was Studied*

Type of Cerebral Palsy	Location	Drug Received	Patients, No.	Age, Yr., Mo.	
				Mean	Range
Athetoid		Zoxazolamine	19	9,4	2,1-17,2
		Placebo	8	8,5	2,1-14,0
Spastic	Hemiplegia	Zoxazolamine	15	7,2	3,2-13,4
		Placebo	7	7,3	2,6-13,6
Spastic	Mixed	Zoxazolamine	13	7,7	3,4-13,6
		Placebo	5	8,3	4,7-14,1
Spastic	Quadriplegia	Zoxazolamine	21	5,6	2,6-28,5
		Placebo	7	8,5	3,1-12,9
Spastic, total group		Zoxazolamine	49	7,6	2,6-28,5*
		Placebo	19	8,0	2,6-14,1
Total group		Zoxazolamine	68	8,1	2,1-28,5†
		Placebo	27	8,1	2,1-14,1

* Next youngest patient was 13 yr., 6 mo.
† Next youngest patient was 17 yr., 2 mo.

These doses were maintained for the remaining three weeks of the test period. In no child was medication discontinued.

Sixty-eight children were given zoxazolamine and 27 were given a placebo. Of the 68 spastics, 49 received the drug and 9 the placebo. Of the 27 athetoids, 19 received the drug and 8 the placebo. Reactions were few. Three children developed a rash; one, nasal stuffiness; one, dizziness; two, headache; four, drowsiness; and one, hypotonia. This was a total of nine children, since two complained of both headache and drowsiness; one of these patients was receiving the placebo. Determinations of the hemoglobin level and leukocyte and differential counts were done on all children before the test and on the experimental group at the end of the test period. There was no effect on the hemoglobin level or the white blood cell or differential counts.

Results

An analysis of the results in the individual test areas is shown in tables 2 through 7. When the t-test was applied to the results it showed that there was no significant difference between the improvement obtained in the experimental group and that in the control or placebo group.

Table 2.—*Improvement in Stretch Reflex After Medication in Children with Cerebral Palsy Receiving Zoxazolamine or a Placebo*

Type and Location of Cerebral Palsy	Muscle Tested	Mean Improvement* in Drug Group†	P‡	Mean Improvement* in Control Group†	Significance of Difference§
Spastic, mixed	Right hamstrings	10	0.01	Not known	...
Spastic, quadriplegia	Left hamstrings	10	0.03	Not known	...
Spastic, total group	Hamstrings	9	0.05	8	None

* Improvement measured in degrees of arc.
† Drug group received zoxazolamine, control group received placebo.
‡ P=probability that observed improvement in drug group was due to accident of sampling.
§ Significance of difference between improvement in drug group and that in control group.

The stretch reflex was improved in the hamstring muscles of the spastic patients only, the mean improvement ranging from 9 to 10 degrees of arc (table 2). This improvement was not significantly different from that in the placebo group. Passive range of motion was improved in the quadriceps, hamstring muscles, and biceps of the spastics and athetoids, the mean improvement ranging from 3 degrees of arc for the biceps of the spastic patients with hemiplegia to 12 degrees of arc for the right hamstring muscles of the spastic patients with quadriplegia (table 3). This improvement did not vary significantly from that in the control group.

Table 3.—*Improvement in Passive Range of Motion After Medication in Children with Cerebral Palsy Receiving Zoxazolamine or a Placebo*

Type and Location of Cerebral Palsy	Muscle Tested	Mean Improvement* in Drug Group†	P‡	Mean Improvement* in Control Group†	Significance of Difference§
Spastic, hemiplegia	Biceps	3	0.04	3	None
Spastic, quadriplegia	Right biceps	5	0.01	10	None
	Left biceps	7	0.01	7	None
	Left quadriceps	11	0.03	Not known	...
	Right hamstrings	12	0.05	18	None
	Left hamstrings	9	0.01	9	None
Spastic, total group	Biceps	4	0.01	7	None
	Hamstrings	6	0.02	11	None
Athetoid	Left hamstrings	6	0.05	11	None
	Right hamstrings	9	0.01	0	None
	Right biceps	5	0.01	-6	0.01

* Improvement measured in degrees of arc.
† Drug group received zoxazolamine, control group received placebo.
‡ P=probability that observed improvement in drug group was due to accident of sampling.
§ Significance of difference between improvement in drug group and that in control group.

Active range of motion was improved in the hamstring muscles, biceps, and triceps of the spastics and athetoids from 7 to 22 degrees of arc, but not more significantly than in the control group (table 4). Resistance, or ability to extend the knee against a constant weight of 3 or 5 lb., was tested on the quadriceps only, and the spastics and the athetoids showed a range of mean improvement of 9 to 13 degrees of arc, which was not significantly different from the mean improvement in the control group (table 5).

TABLE 4.—*Improvement in Active Range of Motion After Medication in Children with Cerebral Palsy Receiving Zoxazolamine or a Placebo*

Type and Location of Cerebral Palsy	Muscle Tested	Mean Improvement* in Drug Group†	P‡	Mean Improvement* in Control Group†	Significance of Differences§
Spastic, hemiplegia.	Triceps	8	0.01	10	None
Spastic, quadriplegia	Left biceps	13	0.01	8	None
	Right hamstrings	22	0.02	11	None
Spastic, total group	Hamstrings	11	0.01	11	None
	Biceps	9	0.03	8	None
	Triceps	9	0.01	14	None
Athetoid	Right hamstrings	7	0.05	9	None
	Left hamstrings	9	0.03	11	None

* Improvement measured in degrees of arc.
† Drug group received zoxazolamine, control group received placebo.
‡ P=probability that observed improvement in drug group was due to accident of sampling.
§ Significance of difference between improvement in drug group and that in control group.

For hand and arm skills (rings off peg, blocks in the box), the spastic group alone showed a mean increase of one to five actions in 60 seconds (table 6). This was not significantly different from the mean improvement of the control group. In functional work, specifically stair climbing, the spastic group alone showed a mean increase of four steps in 60 seconds. No significant difference from the improvement in the control group was found (table 6). The tests for the muscles involved in speech articulation (tongue elevation and lateralization, lip and jaw closures) in the spastics and athetoids showed a mean increase in the number of motions performed of from 2 to 10 in 10 seconds (table 7). There was no significant difference between this mean and that for the control group.

TABLE 5.—*Improvement in Motion Against Resistance After Medication in Children with Cerebral Palsy Receiving Zoxazolamine or a Placebo*

Type and Location of Cerebral Palsy	Muscle Tested	Mean Improvement* in Drug Group†	P‡	Mean Improvement* in Control Group†	Significance of Differences§
Spastic, quadriplegia	Right quadriceps	12	0.01	10	None
	Left quadriceps	11	0.01	5	None
Spastic, mixed	Right quadriceps	10	0.03	Not known	...
	Left quadriceps	10	0.02	Not known	...
Spastic, total group	Quadriceps	9	0.01	4	None
Athetoid	Right quadriceps	13	0.04	Not known	...

* Improvement measured in degrees of arc.
† Drug group received zoxazolamine, control group received placebo.
‡ P=probability that observed improvement in drug group was due to accident of sampling.
§ Significance of difference between improvement in drug group and that in control group.

TABLE 6.—*Improvement in Functional Hand and Arm Skills After Medication in Children with Cerebral Palsy Receiving Zoxazolamine or a Placebo*

Type and Location of Cerebral Palsy	Activity	Mean Improvement* in Drug Group†	P‡	Mean Improvement* in Control Group†	Significance of Differences§
Spastic, hemiplegia	Rings off peg (both hands)	5	0.01	5	None
Spastic, quadriplegia	Rings off peg (both hands)	2	0.01	1	None
Spastic, total group	Rings off peg (both hands)	3	0.01	3	None
	Rings off peg (one hand)	1	0.04	2	None
	Blocks in box (one hand)	2	0.01	1	None
	Stair climbing	4	0.05	7	None

* Improvement measured as increase in number of times activity could be performed in 60 seconds.
† Drug group received zoxazolamine, control group received placebo.
‡ P=probability that observed improvement in drug group was due to accident of sampling.
§ Significance of difference between improvement in drug group and that in control group.

TABLE 7.—*Improvement in Use of Muscles of Speech Articulation After Medication in Children with Cerebral Palsy Receiving Zoxazolamine or a Placebo*

Type and Location of Cerebral Palsy	Activity	Mean Improvement* in Drug Group†	P‡	Mean Improvement* in Control Group†	Significance of Differences§
Spastic, hemiplegia.	Jaw closure	3	0.05	0	None
Spastic, quadriplegia	Jaw closure	2	0.05	7	None
Spastic, mixed......	Jaw closure	4	0.01	Not known	...
Spastic, total group	Jaw closure	3	0.01	3	None
Athetoid	Jaw closure	3	0.02	Not known	...
Spastic, hemiplegia.	Lip closure	4	0.01	0	None
Spastic, quadiplegia	Lip closure	3	0.01	5	None
Spastic, mixed......	Lip closure	4	0.01	Not known	...
Spastic, total group	Lip closure	4	0.01	3	None
Athetoid	Lip closure	5	0.01	Not known	...
Spastic, quadriplegia	Tongue elevation	3	0.01	5	None
Spastic, total group	Tongue elevation	3	0.01	3	None
Athetoid	Tongue elevation	2	0.02	Not known	...
Spastic, hemiplegia.	Tongue lateralization	3	0.05	6	None
Spastic, total group	Tongue lateralization	2	0.01	5	None

* Improvement measured as increase in number of times activity could be performed in 10 seconds.
† Drug group received zoxazolamine, control group received placebo.
‡ P=probability that observed improvement in drug group was due to accident of sampling.
§ Significance of difference between improvement in drug group and that in control group.

Table 8 summarizes the data concerning all areas tested in which there was significant improvement after medication and again points out that in no case was the improvement in the drug group significantly greater than that in the control group. In fact, in looking at the individual tables we see that, although the mean difference between the improvement in the experimental group and that in the control group is not of significance when viewed statistically, the control (placebo) group in many instances showed a greater range of improvement than the experimental group.

Subjective Reports from Parents

The therapists, the parents, the patients, and one of the doctors did not know which children received zoxazolamine and which the placebo. Upon completion of the evaluations, subjective reports were requested from the parents. Forty-eight replies were received from the parents of the 68 children receiving zoxazolamine. Twenty-five reported improvement, 16 reported no effect, and 8 reported bad effects. The improvements noted were as follows: 16 children were more relaxed, 9 showed functional improvement, and 9 were sleeping better. In some individuals more than one area of improvement was noted.

TABLE 8.—*Summary of Data Concerning Areas in Which There Was Significant* Improvement After Medication in Children with Cerebral Palsy Receiving Zoxazolamine or a Placebo*

Function Tested	Muscles or Activity Tested	Type and Location of Cerebral Palsy	No. of Children in: Drug Group†	No. of Children in: Control Group†	Mean Improvement in Drug Group, Range	Significance of Difference‡
Stretch reflex	Hamstrings	Spastic, quadriplegia	14	5		
		Spastic, mixed	12	5	9-10§	None
		Spastic, total group	41	18		
Passive range of motion	Quadriceps, hamstrings, biceps	Spastic, hemiplegia	15	7		
		Spastic, quadriplegia	12-19	2-7		
		Spastic, total group	37-47	17-19	3-12§	None
		Athetoid	19	8		
Active range of motion	Hamstrings, biceps, triceps	Spastic, hemiplegia	11	4		
		Spastic, quadriplegia	18	7	7-22§	None
		Spastic, total group	24-46	6-20		
		Athetoid	18	8		
Motion against resistance	Quadriceps (only one tested)	Spastic, quadriplegia	14-16	5	9-13§	None
		Spastic, mixed	12	5		
		Spastic, total group	41	15		
		Athetoid	11	4		
Hand and arm skills	Rings off peg, blocks in box	Spastic, hemiplegia	15	6		
		Spastic, quadriplegia	16	5	1-5‖	None
		Spastic, total group	33-36	13		
Functional work	Stair climbing	Spastic, total group	22	9	4‖	None
Speech articulation	Motion of tongue, lips, jaw	Spastic, hemiplegia	11-12	5-6		
		Spastic, quadriplegia	13-17	5		
		Spastic, mixed	12	4	2-5¶	None
		Spastic, total group	33-41	13-15		
		Athetoid	13-15	6		

* Probability that improvement in drug group was due to accident of sampling was 0.1 to 0.5.
† Drug group received zoxazolamine, control group received placebo.
‡ Significance of difference between improvement in drug group and that in control group.
§ Improvement measured in degrees of arc.
‖ Improvement measured as increase in number of times activity could be performed in 60 seconds.
¶ Improvement measured as increase in number of times activity could be performed in 10 seconds.

Seventeen replies were obtained from the parents of the 27 children receiving the placebo. Ten noted improvement, 4 noted no effect, and 3 noted ill-effects. Five children were more relaxed, six showed functional improvement, and one slept better.

Conclusions

Although the preliminary pilot studies [1] seemed to indicate the efficacy of zoxazolamine in the treatment of cerebral palsy, this particular study does not demonstrate any appreciable effect, in the dosage in which the drug was used, on the stretch reflex; on the range of motion, either passive, active, or against resistance; or upon performance of an already learned task. We endeavored to approach the problem purely objectively. The only real variable in the results is apparently psychological.

We do not presume to say that the drug is without effect. Perhaps an increase in dosage and intensive work with the child during the period of administration might bring about some improvement. But the drug alone is not the answer for the treatment of cerebral palsy, as no drug has been to date. Hard work, proper and adequate bracing, and judicious surgery, coupled with normal growth and an opportunity for maturation, still give the best results.

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This study was supported by a grant from the McNeill Laboratories, Inc., Philadelphia. They also supplied the zoxazolamine as Flexin and the placebo.

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SPECIAL ARTICLE

SOCIAL SECURITY FOR PHYSICIANS

2. POSITION OF THE MEDICAL PROFESSION CONCERNING THE COVERAGE OF PHYSICIANS UNDER THE SOCIAL SECURITY ACT

The American Medical Association, through repeated actions of its House of Delegates and Board of Trustees, has expressed its opposition to the compulsory coverage of physicians under Title II (Old Age, Survivors and Disability Insurance Provisions) of the Social Security Act. The Association is not opposed to the voluntary inclusion of physicians under this title of the act.

Eight years ago, in June, 1949, at Atlantic City, the House of Delegates adopted a resolution disapproving the extension of "Social Security" to self-employed individuals including physicians.

In December, 1953, the House again opposed such coverage. In June, 1954, 1955, and 1956, the House reaffirmed its opposition to the compulsory coverage of physicians under the Social Security Act. In June, 1954, the Board of Trustees enlarged upon the Association's position to indicate that there was no opposition to the coverage of physicians under the act on a voluntary basis.

In June, 1957, at New York, the House most recently reaffirmed its position on Social Security coverage and recommended a stepped-up information program to explain the reasons for the medical profession's position on this issue.

Reasons for the Medical Profession's Position

Many informed members of the profession have seen and are deeply concerned about the inevitable pattern of social insurance schemes. Their growth from retirement payments to survivorship payments to permanent and total disability payments to temporary cash sickness benefits and finally to national compulsory health insurance is all too clear. One nation after another has succumbed to the drive to extend the compulsory system of taxation called "social insurance" to finance a vast program of medical and hospital care for taxpayers and nontaxpayers. The history of developments in this field in foreign countries has, therefore, served to warn the medical profession in this country of the usual consequences of a federal social security program.

The Social Security Act in the United States, which was born of the depression in 1935, has followed this traditional pattern of expansion despite a period of continuing national prosperity. Contrary to the approach of those who suggest more and more federal benefits, the medical profession has continuously adhered to the philosophy that rewards by the federal government for long life create a leveling or an averaging process which, when combined with ever-increasing taxes, tend to destroy individual initiative and will result in increased federal control of and responsibility for an increasing percentage of our people.

In tracing the history of Social Security, it will be noted that the program has continuously been referred to as "insurance." This is a misnomer. In 1934, only a year before the Social Security Act became law, the United States Supreme Court rebuked the 73rd Congress for trying to avoid responsibility under the veterans' insurance contracts issued during World War I. With this decision fresh in their minds, the persons who drafted the Social Security Act were careful to see that nobody got a contract under Title II of that program.

Later, in 1937, the United States Attorney General in defending the constitutionality of the Social Security Act before the United States Supreme Court stated, "Social security benefits are gratuities to be paid by the national government directly to individuals. The Act creates no contractual obligation with respect to the payment of benefits." The entire program was, at that time, justified to the Supreme Court on the public-charity, general-welfare theory and on that basis, on May 24, 1937, the court upheld the constitutionality of the act. That decision established the legal character of Social Security.

The fact that the Social Security Act creates no contractual obligations with respect to the payment of benefits was again very frankly and honestly admitted in a report of December, 1954, issued by the Ways and Means Committee of the House of Representatives entitled "Social Security After Eighteen Years."

Thus, the law requires the payment of "premiums," but does not guarantee the payment of benefits in return. In addition, tax rates, the taxable wage base, and the type and amount of benefits are not stable, as demonstrated by the many changes legislated by Congress during the past 20 years. Finally, the benefits that are available are qualified by conditions with which most of the people who are being taxed are unfamiliar.

Is the Social Security program actuarially sound? According to normally accepted insurance standards the answer must be "no." The 1954 report of the House Ways and Means Committee, referred to above, spells out in detail the ratio of taxes paid to benefits received. The report states that retired eligible beneficiaries under the Old Age, Survivors and Disability Insurance program as of December, 1952, were receiving and will receive, on the average, benefits equal to $24 for each 50 cents paid in taxes during the working years of their lives. This ratio was further increased by the amendments of 1954 to $30 in benefits for each 50 cents paid in taxes. Figures following the 1956 amendments have not as yet been reported.

It is obvious that when the government provides something to an individual or to a group for less than it actually costs, part of the cost must be paid by someone else. These deficits will have to be met by higher Social Security taxes, through higher income taxes, or by reducing the benefits under the program.

Since most self-employed physicians do not retire at age 65, the compulsory tax which would be imposed upon them if they become covered under the Social Security system would be unjust and unreasonable. It is a proved fact that physicians who are able to work seem to prefer to keep right on practicing medicine. A survey on this point shows that over 85% of the doctors between the ages of 65 and 72 are in active practice. Over 50% of physicians who retire do so after the age of 74. Thus, if forced under this program, a typical physician would be required to continue to pay Social Security taxes until age 72 before he would receive benefits. This is true because of the work-test applied to retired covered employees described in the first article of this series.

Since Social Security retirement benefits are not of primary value to physicians, the taxes which they would pay under the program would be used primarily to finance any survivorship benefits which might accrue to the physician's family. The amount of these taxes is sufficient to purchase comparable survivorship benefits from private insurance companies.

For the aforementioned sound philosophical and economic reasons, the medical profession has opposed the compulsory coverage of its members under what it considers to be an unsound, unsuited, and unsolicited government welfare program.

COUNCIL ON DRUGS

Report to the Council

The Council has authorized publication of the following report.

H. D. Kautz, M.D., *Secretary.*

Because of the renewed awareness of genetics in relation to the cause of disease and because of an increasing interest in this subject, the following article is most timely. The author has prepared this report at the invitation of the Subcommittee on Blood Dyscrasias of the Committee on Research.

Norman De Nosaquo, M.D., *Secretary,*
Committee on Research.

DRUG REACTIONS, ENZYMES, AND BIOCHEMICAL GENETICS

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In discussions of drug idiosyncrasy, careful distinction should be made between toxic reactions caused by immunologic mechanisms (drug allergy) and abnormal reaction caused by exaggeration or diminution of the usual effect of a given dose.[1] Although some progress has been made in the study of mechanisms of drug allergy, little was known until recently about the pathogenesis of hypersusceptibility reactions and hyposusceptibility reactions. Data are available now which suggest that reactions of this type may be caused by otherwise innocuous genetic traits or enzyme deficiencies.

Hockwald and his co-workers[2] demonstrated that approximately 10% of American Negroes and a very small number of caucasians developed hemolytic anemia when given an average dose of primaquine or chemically related drugs. Beutler and associates[3] showed that red blood cells of susceptible individuals possessed decreased numbers of nonprotein, sulfhydryl groups. It has now been pointed out that primaquine sensitivity is related to glucose-6-phosphate dehydrogenase activity.[4] Investigations of the genetics of this trait, now in progress, suggest that the abnormality is caused by a sex-linked gene of intermediate dominance.[5] The red blood cell abnormality per se has no known deleterious effect on the individual or on red blood cell life span. Excessive doses

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of primaquine or related drugs appear to produce hemolytic anemia in all individuals. The red blood cells of susceptible subjects lack sufficient enzymatic protection against damage by the drug even with smaller dosage levels. These investigations explain the greater incidence of hemolytic anemia among Negroes when they were given pamaquine or sulfanilamide in past years. Hemolytic anemia due to naphthalene[5] and nitrofurantoin (Furadantin)[6] also has been demonstrated to be associated with the sulfhydryl defect responsible for primaquine sensitivity. Two different in vitro tests to detect susceptibility have been described.[7]

Lehmann and Ryan[8] pointed out that prolonged apnea caused by the muscle relaxant succinylcholine (Anectine, Quelicin, Sucostrin) chloride sometimes can be explained by low levels of pseudocholinesterase. A certain amount of this enzyme is required for inactivation of the drug. The enzyme was found to be diminished in sensitive patients as well as in some of their family members. These findings have been confirmed.[9] The exact mode of inheritance of this familial enzymatic deficiency is still indeterminate. Other causes of pseudocholinesterase deficiency such as malnutrition and liver diseases were ruled out.

It is not unlikely that some drug sensitivity reactions previously characterized as caused by hypersusceptibility may be produced by similar mechanisms. It is also possible that the potential for antibody formation due to haptenes, and therefore susceptibility to drug allergy, is conditioned by genetic factors. Knowledge of the metabolic fate of various drugs and improved methods of studying enzyme and antibody reactions in man promise to provide tools for further approaches to this problem.

Patients with hereditary hyperbilirubinemia (constitutional nonhemolytic jaundice) are likely to be a challenging group for study, since they have been postulated to have deficient enzymatic machinery for the coupling of bilirubin to glucuronides.[10] Since many drugs such as salicylates and sex hormones are excreted as glucuronides, valuable hints may be forthcoming from study of the fate of such drugs in these patients. The precipitation of symptoms of acute intermittent porphyria by barbiturates and alcohol is well known. Further evidence of interference by these agents with the disordered enzymatic reactions responsible for the disease is likely to be found. Megaloblastic anemia is sometimes produced by anticonvulsants.[11] A genetically determined abnormality of folic acid metabolism may be the reason for this complication. Liver damage caused by cinchophen, jaundice induced by chlorpromazine, and cinchonism produced by small doses of quinine or quinidine are other reactions possibly caused by genetic enzymatic defects.

Tolerance to drugs or failure of expected effect with an average dose may have a similar basis. No proved examples due to genetic defects exist in man. Some strains of rabbits, however, can be given large quantities of atropine and related compounds without effect.[12] These animals inactivate atropine by a genetically controlled enzyme, atropinesterase, in the blood and tissues. Marked variability in length of narcosis induced by hexobarbital (Evipal) sodium has been described in various species and in different strains within a species. These differences could be related to variable enzymatic detoxification activity in liver microsomes.[13] Insulin-resistant mouse strains exist which survive 300 times the dose of insulin which kills normal mice.[14]

Qualitative differences between species also exist. A drug effect exhibited by most individuals of one species may be rare in other species. Thus, hyperexcitability due to morphine is the usual response in cats and race horses but occurs rarely in man in whom it is considered an idiosyncrasy. Comparative biochemical studies on drug metabolism may provide clues to such idiosyncrasies.

Another pertinent area for research includes drug reactions involving red blood cell constituents in the newborn. Toxic methemoglobinemia is produced in this age period by exposure to aniline dye-stamped diapers[15] or by ingestion of well-water high in nitrate content.[16] Over 90% of the well-water cases have occurred in children under two months of age.[17] Since the concentration of the red blood cell enzyme required for reduction of methemoglobin to hemoglobin is decreased in the red blood cells of the newborn,[18] it is probable that such enzyme deficiency provides a partial explanation for the maintenance of the abnormal pigment. Red blood cell destruction by excessive doses of menadiol sodium diphosphate (Synkayvite Sodium Diphosphate, Vitamin K Analogue) caused hemolytic anemia and kernicterus in some infants and has been related to low vitamin E levels in cells of infants.[19] The lowered concentration of red blood cell catalase in cells of infants[20] may be one significant factor in susceptibility to vitamin K hemolysis. The previously mentioned sulfhydryl defect associated with a variety of drug sensitivities also may predispose the infant to vitamin K hemolysis.[5]

The detection of hereditary biochemical traits that cause drug reactions may contribute to the progress of human genetics in general. Such traits may be related to susceptibility or resistance to diseases other than drug idiosyncracies. Some geneticists argue that relatively rare traits such as some of those under discussion could not be maintained in the population at their observed frequency unless such traits provided the carriers with some selective advantage.[21] The general validity of this argument appears to have been confirmed by the demonstration of decreased malaria mortality in infants with sickle-trait and the possible relationship of the ABO blood groups to the frequency of diseases such as ulcer and gastric cancer.

Since a given gene may be more frequent in certain ethnic groups, any drug reaction that is more frequently observed in a given racial group, when other environmental variables are equal, will usually have a genetic basis. Investigations on drug reactions therefore should include careful notation of the ethnic or racial extraction of the patient. Consanguinity, such as in first-cousin marriages among the parents, points to a recessive genetic mechanism and should be inquired about and mentioned. Unfortunately, drug reactions among parents and siblings will not often be elicited when the physician is taking a family history, because families are small and most drugs are new and have not been used for long. Once a possible hereditary defect is identified, family and population surveys are desirable.

Genetically conditioned drug reactions not only are of practical significance but may be considered pertinent models for demonstrating the interaction of heredity and environment in the pathogenesis of disease. In these instances it can be shown clearly how hereditary, gene-controlled enzymatic factors determine why, with identical exposure, certain individuals become "sick," whereas others are not affected. It is becoming increasingly probable that many of our common diseases depend on genetic-susceptibility determinants of this type. Haldane's prediction[22] that "the future of biochemical genetics applied to medicine is largely in the study of diatheses and idiosyncrasies, differences of innate make-up which do not necessarily lead to disease but may do so" has been confirmed by these recent developments in therapeutics.

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Sedation Threshold.—Several recent neurophysiological advances, such as the elucidation of reticular system functions, seem highly relevant to the understanding of brain mechanisms involved in psychological disorders. Most of this information has come from the animal laboratory or from patients subjected to surgical operations. Pertinent methods for neurophysiological study of the intact human subject are needed to provide closer links between the data of the psychiatric clinic and the neurophysiology laboratory. This paper deals with one such method, the sedation threshold. The sedation threshold is an objective pharmacological determination, which depends upon the electroencephalographic (EEG) and speech changes produced by intravenous Sodium Amytal. Starting from the common clinical impression that effect sedative dosage is correlated with the degree of tension, the method was originally developed to measure tension or manifest anxiety. After the realization of this initial aim, continued research revealed additional psychological correlates of the sedation threshold. The results indicated that the method has important potentialities as a tool in psychiatric and psychomatic research.—C. Shagass, M.D., Sedation Threshold, *Psychosomatic Medicine*, September-October, 1956.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
Edited Under the Direction of the Board of Trustees

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Subscription price . Fifteen dollars per annum in advance
Cable Address . . . . "Medic, Chicago"

DIAGNOSIS OF URINARY TRACT INFECTION

WITH the publication in this issue (page 815) of the report by Clabaugh and Rhoads, the subject of the diagnosis of urinary tract infections is reopened. The finding of potentially pathogenic organisms in a so-called clean specimen of urine, although suggestive of such an infection, is far from being conclusive evidence of it. Guze and Beeson,[1] quoted by these authors, found that despite use of careful aseptic and antiseptic technique some bacteria were transferred from the urethra to the bladder during catheterization and concluded that obtaining a specimen of urine in this way does not provide a completely trustworthy specimen for bacteriological culture. Even though the urinary meatus is scrupulously cleaned, organisms comprising what may be considered the normal urethral flora remain in the anterior portion of the urethra. Philpot[2] investigated the flora of the so-called clean or midstream voided urine of normal men and catheterized specimens from normal women and found that 82% of the former and 34% of the latter contained bacteria, many of which were potential pathogens. Because these subjects had no symptoms suggestive of urinary tract infection, he concluded that the finding of such organisms in the urine does not necessarily indicate the presence of a bacterial disease. In most subjects these organisms although present were few in number. This suggests that the number of bacteria present is probably as important as their identification. This conclusion was further borne out by MacDonald and co-workers,[3] who believe that counts of more than 100,000 organisms per cubic centimeter of uncentrifuged urine indicate active urinary tract infection. Philpot believes that any organism seen in a direct smear of uncentrifuged urine stained by Gram's method is probably present in numbers of 100,000 per cubic centimeter or more.

Clabaugh and Rhoads, by using a catheter within a catheter, observed positive cultures in 52% of urine specimens obtained through the larger catheter and 32% in those obtained from the smaller catheter. Broth cultures in which the catheter tips were dipped after removal were positive in 89% in the case of the larger catheters and 52% in the case of the smaller. These were all from female patients who, although most of them were asymptomatic, all showed the presence of leukocytes in the urine and were believed to have some degree of urinary tract infection. Theoretically even with this technique it is possible to introduce urethral contaminants into the bladder, but the likelihood of this is greatly reduced. Further studies on this possibility should be made. There is a great need for a sharpening of the diagnostic procedures used to determine urinary tract infections because many patients who do not need such treatment are treated for this condition on the basis of a positive culture of a catheterized specimen obtained in the usual way. If the new technique results in fewer cases of cystitis due to instrumentation, this will be an added boon.

WHAT PRICE ACCIDENTS?

Elsewhere in this issue (page 846) is a summary by the Bureau of Medical Economic Research of the American Medical Association of its nationwide survey of the burden of patients hospitalized on account of accidents. The summary offers several criteria for measuring the accident load. For example, payroll expenses of these hospitals because of accident cases in 1955 were 198 million dollars, or 7.3% of the total payroll. In general, the burden of accident cases is 7 to 8% of the grand total for the 6,000 general and special hospitals in the United States. Presumably, the burden on physicians comes within the same range. The proportion of cases treated by physicians in the home and the office in the accident category will be estimated in later bulletins in this series. The National Safety Council has utilized earlier studies of the Bureau of Medical Economic Research—notably, the finding that fatal accidents outrank heart disease, whose special victims are retired persons, as the number 1 destroyer of the working years of life in the United States. Moreover, these new findings, in addition to others in this series of studies by the Bureau of Medical Economic Research, clearly establish that accidents and the other great nondisease category, pregnancy, together account for about one-fourth of the aggregate hospital load. It is most unfortunate that many careless observers infer that patients in disease categories comprise 100% of the national hospital burden.

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ORGANIZATION SECTION

JUDICIAL COUNCIL SESSION

Two appeals alleging discrimination against medical society membership were heard in Chicago last month by the A. M. A. Judicial Council. In one case the Council determined it was powerless to act, for lack of jurisdiction. The other appeal was turned down for lack of "convincing proof of irregularity"—but with a recommendation that the A. M. A. Board of Trustees create a special committee to help bring agreement out of an underlying dispute.

In other actions, the Judicial Council rendered its first interpretive opinion involving the newly worded A. M. A. *Principles of Medical Ethics* and submitted an annual report. (Detailed reports on the Sept. 7 meeting will be published in later issues of THE JOURNAL.)

Georgia Case

A special committee of trustees was suggested to help settle differences between the Medical Association of Georgia and the Richmond County, Ga., Medical Society on one hand, and six salaried physicians on the other hand. These doctors are faculty members of the Medical College of Georgia and practice at the college's Talmadge Memorial Hospital. They claim they are being refused medical society membership because they accept fees for treating private patients in the hospital. All these fees go into a hospital research fund.

The county and state medical associations contended that the six physicians are engaged in corporate practice of medicine, in violation of medical ethics, because a contract specifying disposition of the fees does not allow the physicians unrestricted choice of how the money will be spent. Both sides expressed hope for an early solution to the problem. As Dr. George R. Dillinger, chairman of the council of the Medical Association of Georgia, told the A. M. A. Council: "We only want the problem settled ethically and legally."

Colorado Case

The Council ruled lack of jurisdiction in the case of Dr. William D. Broxon of Trinidad, Colo. He argued that the Las Animas County Medical Society threatened to label him as unethical unless he withdrew his association with the United Mine Workers of America health and welfare fund. He claimed inadequate response to an appeal to the Colorado State Medical Society—whose representatives testified that the society had taken no improper actions against Dr. Broxon, and that the U. M. W. A. was not a factor in the case. The Judicial Council members agreed that, since there were no actual charges against Dr. Broxon and since he was a county society member in good standing, they had no issues upon which to rule.

Local Responsibility

In its annual report the Council reaffirmed its stand that local medical societies should accept responsibility in deciding judicial matters affecting their own members. A local medical society ethics committee, noted the Council, is "a body before whom the accused could appear, hear the charges brought against him and offer his defense. While it is never pleasant to find a colleague guilty and impose punishment this is a responsibility falling on some of us. Local committees charged with hearing complaints alleging unethical conduct are under no obligation to find every accused guilty."

But, the Judicial Council went on to say: "If local societies fail to curtail unethical practices, ethics lose their effectiveness. Failure on the part of the component society to demand respect for and adherence to the Principles [of medical ethics] breeds contempt and disrespect for them."

Opinion on Ethics Principles

The Judicial Council's first interpretive opinion on the Principles as revised last June was given in reply to a question of K. C. Young, executive secretary of the Los Angeles County Medical Association. He quoted Item 7, which states that a physician's fee "should be commensurate with the services rendered and the patient's ability to pay." Young asked whether this means that a physician is authorized to double his fee if the patient's income is twice that of the average person, and if the fee should be scaled down accordingly for patients with below-average income. He wrote: "An opinion on this point is particularly needed by our fee complaint committee, which in the past have largely given opinions based on an average fee."

The Council emphasized that the "basic ethical concepts" included in both the 1955 and 1957 editions of the Principles are identical in spite of changes in format and wording. "Therefore," it stated, "no opinion or report of the Council interpreting these basic principles which were in effect at the time of the revision has been rescinded by the adoption of the 1957 Principles." The Council replied to Young that Section 7 of the Principles "does not imply or mean that a sliding scale of fees is to be adopted individually or by the profession . . . to justify an excessively high fee or to approve an inadequately low fee." Said the Judicial Council: "[The phrase] 'commensurate with the services rendered' recognizes that although there are some services which are considered invaluable, nonetheless their practical value lies within a range—within limits above or below which a fee is unconscionable." The opinion also pointed out that the doctor-patient advance discussion of fees will solve most related problems before they occur.

Chairman of the Judicial Council is Dr. Homer L. Pearson Jr., of Miami. Other members are Drs. George A. Woodhouse of Pleasant Hill, Ohio; James M. Hutcheson of Richmond, Va.; Louis A. Buie Sr., of Rochester, Minn.; and Robertson Ward of San Francisco.

MEDICINE-TELEVISION RESPONSE IN WAUSAU, WIS.

Another success story in medical public relations via television station liaison (The Journal, May 4, 1957, page 49) is being told in Wausau, Wis. The Marathon County Medical Society, with station FSAU-TV, reports "marvelous response" from viewers of regular Sunday half-hour live telecasts which began as a public service feature last June 16.

"If we can make one person in our area think about medicine and how it might be able to help him, we have accomplished our goal," said Bart Kellnhauser, WSAU-TV program director. The weekly series, entitled "Our Medical Service," combines a panel discussion (in lay terms) with questions from the viewing audience, medical equipment demonstrations, and a variety of visual materials. Recent programs have covered the separate topics of poliomyelitis, first aid, cancer, auto safety, heart disease, civil defense, and hospitals. Scheduled for later presentation were mental health, medicine and religion, health and athletics, advances in surgery, the physician and world peace, medical education, and the doctor and the teen-ager.

Fig. 1.—Technician James Harrun demonstrates the taking of an electrocardiogram during weekly telecast presented as a public service by Marathon County Medical Society and WSAU-TV in Wausau, Wis. Medical student Kenneth Ender enacts role of patient.

Dr. Marvin H. Olson of Wittenberg, Wis., who directs the series and serves as moderator, said: "The volume of mail with questions and comments is gradually increasing, and the program has also been enthusiastically followed by the medical profession and allied groups. A thirteen-week series was originally scheduled but it has been decided to continue the program indefinitely, and plans are being made to increase the length to a full hour."

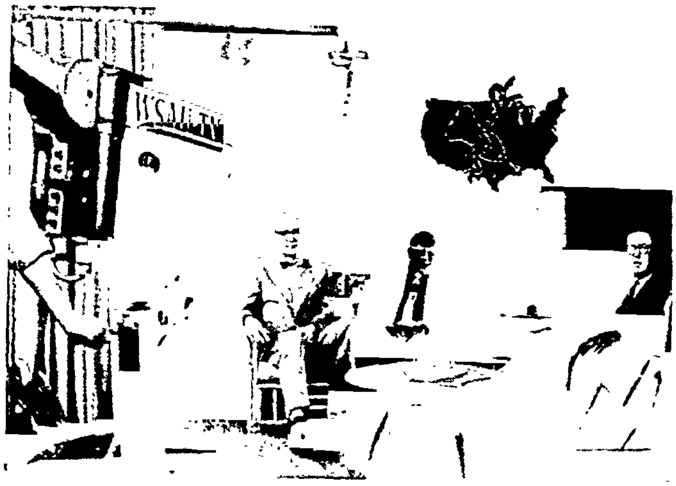

Fig. 2.—Drs. J. Struthers, J. M. Freeman, and M. H. Olson prepare for panel discussion which highlights program.

Individual telecasts are centered around a panel of three or four physicians invited by rotation through county society membership and, occasionally, from neighboring medical societies. One participating physician remarked that the program was the best thing that had happened around Wausau in a long time. Said Dr. Olson: "Viewers are acquiring a needed sense of security in knowing that their own doctors are able to make modern advances in medicine available to them. This is encouraging early treatment, and renewing and increasing their faith in their family physician."

A. M. A. CLINICAL MEETING IN PHILADELPHIA

Philadelphia will be the scene of the A. M. A. 11th Clinical Meeting on Dec. 3 through 6. The center of activities will be Convention Hall where scientific exhibits, color television, motion pictures, technical exhibits, and lectures will be presented. Headquarters for the House of Delegates will be at the Bellevue-Stratford Hotel.

The convention will be geared especially for family doctors. Some of the highlights include (1) transatlantic conference between distinguished physicians in London and Philadelphia on "Advances in Chemotherapy of Cancer" via two-way telephone, 3 p. m. EST Wednesday, Dec. 4; (2) color television schedule of surgical demonstrations emanating from Lankenau Hospital; (3) motion picture program daily plus a special session Tuesday evening, Dec. 3; (4) exhibits featuring a well-rounded program and special displays on the history of medicine in the Philadelphia area, and fractures and manikin demonstrations on problems of delivery; (5) panel discussions on cardiovascular disease, cancer, emotional problems of menopause, hypertension, diabetes, arthritis, traumatic injuries; and (6) the General Practitioner of the Year Award to be presented by the A. M. A. to an outstanding family doctor.

TASK FORCE ON HOSPITALIZATION OF THE AGED

During the last week in August two bills were introduced into Congress concerning hospitalization of the aged to be financed by Social Security funds. Realizing the effect of this type of legislation on the practice of medicine, the Executive Committee of the Board of Trustees approved the recommendation of the Committee on Legislation that a task force be appointed to give this issue special attention.

Board Chairman Dr. Edwin S. Hamilton appointed Dr. George M. Fister, Ogden, Utah, chairman of the task force, and designated the following members: Drs. Frank C. Coleman, Des Moines, Iowa; Robert L. Novy, Detroit; George F. Gsell, Wichita, Kan.; and James Duffy Hancock, Louisville, Ky. The Committee will conduct and supervise research designed to gather information relative to the problem of hospitalization of persons over 65 years of age.

The task force will not be called on to prepare or present testimony or engage in legislative activities involved in opposing the pending legislation. These functions will be performed by the Committee on Legislation.

CONGRESS ON INDUSTRIAL HEALTH

The 18th Annual Congress on Industrial Health will be held at the Schroeder Hotel in Milwaukee, Jan. 27 to 29, 1958. The Congress is arranged and sponsored by the Council on Industrial Health of the American Medical Association.

THE AMERICAN PHYSICIAN ON TELEVISION OCTOBER 27

Televiewers will see a composite portrait of the American physician on Sunday, Oct. 27, when "Wide Wide World" will present a program entitled "The House I Enter." The A. M. A. is cooperating with the National Broadcasting Company and the sponsors—General Motors—in the presentation of a 90-minute "spectacular," which will feature "live" pickups from Los Angeles; Overbrook, Kan.; Milwaukee; Cleveland; Washington, D. C.; and Atlanta, Ga. Ted Rogers, producer of "The House I Enter," said that the program will show the many facets of medical practice and give the general public an insight into the everyday life of a physician. "Wide Wide World" is seen each Sunday from 4 to 5:30 p.m. (EDT) on the full NBC television network.

NEW EDITOR FOR TODAY'S HEALTH

James M. Liston, Des Moines, Iowa, special features editor for *Better Homes and Gardens,* who has been appointed chief editor of *Today's Health,* will take over his new duties on Nov. 15, relieving Dr. W. W. Bauer of the part-time editorial duties which he has performed for eight years in addition to his responsibilities as Director of the A. M. A. Bureau of Health Education.

Mr. Liston, who is 41, married, and the father of two daughters, took his first editorial job with Rotary International, after teaching high school in Chicago for two years. Later, he was a free-lance radio script writer and a publicity writer for two industrial companies before joining *Better Homes and Gardens* in 1948. He has also written many special features on health subjects.

MEDICAL CIVIL DEFENSE CONFERENCE

The A. M. A. Council on National Defense will sponsor the eighth Annual County Medical Societies Civil Defense Conference on Nov. 9-10, 1957, in Chicago at the Morrison Hotel. These conferences are designed to help local medical and health personnel plan for their roles in disaster and civil defense emergencies.

Congresswoman Martha W. Griffiths of Michigan will report on the status of national civil defense legislation which, in the first session of the 85th Congress, received a considerable amount of attention. Mrs. Griffiths is a member of the House Committee on Government Operations and its Subcommittee on Military Operations.

Another highlight of the conference involves reports on the experience gained through several test operational exercises which were conducted under simulated disaster conditions including a critique of the national exercise "Operation Alert."

There is a lesson to be learned from every disaster. Medical preparedness plans prevented a much greater loss of life last June when Hurricane Audrey struck Cameron and Calcasieu Parishes in Louisiana. Physicians, nurses, and other health personnel were organized and prepared to provide emergency medical and health care. Their response was prompt when the disaster struck. Their work was effective and they proved both the necessity and efficiency of prudent and well-planned disaster organization and preparedness. The program features a one-hour roundup report of operations and experiences gained in the disaster "Hurricane Audrey, 1957." Dr. Joseph A. Hertell will report on general plans and organization in the disaster area, followed by a report on the activities of hospitals during the disaster from Mr. Joseph W. Hinsley. The experiences of physicians and the role of the local medical society will be discussed by Dr. Leonard K. Knapp.

Individuals desiring additional information on the conference are requested to contact Mr. Frank W. Barton, Secretary, Council on National Defense, American Medical Association, 535 N. Dearborn St., Chicago 10.

PROGRAM
SATURDAY—NOV. 9, 1957
MORRISON HOTEL—COTILLION ROOM

8:00- 9:00 **Registration**

9:00- 9:10 **Call to Order**
James H. Lade, M.D., Director, Office of Medical Defense, New York State Department of the Health, Albany, N. Y.

9:10- 9:15 **Welcome Remarks**
Mr. Frank W. Barton, Secretary, Council on National Defense, A. M. A.

9:15- 9:45 **Future Role of FCDA**
Mr. Lewis E. Berry Jr., Deputy Administrator, Federal Civil Defense Administration, Washington, D. C.

9:45-10:15 **FCDA Health Services Activities**
M. M. Van Sandt, M.D., Director, Health Office, Federal Civil Defense Administration, Battle Creek, Mich.

10:15-10:45 **Exercise Operation Rebound**
Stanley W. Olson, M.D., Dean, Baylor University College of Medicine, Houston, Texas.

10:45-11:15 **Civil Defense in Canada**
Gordon E. Fryer, M.D., Medical Consultant, Civil Defense Health Services, Department of National Health and Welfare, Ottawa, Canada.

11:15-12:00 **Status of National Civil Defense Legislation**
Honorable Martha W. Griffiths, U. S. Congresswoman, 17th District of Michigan.

12:00- 2:00 **Luncheon—Embassy Room—Mezzanine Floor**

2:00- 2:30 **National Damage Assessment Program and Critique of Operation Alert 1957**
Mr. H. Burke Horton, Director, National Damage Assessment Program, Office of Defense Mobilization, Washington, D. C.

2:30- 3:00 **Emergency Care of Head Injuries**
Charles E. Dowman, M.D., Member, Committee on Civil Defense, Medical Association of Georgia, Atlanta, Ga.

3:00- 3:30 **Report on Operation Firedrill—Brooke Army Hospital**
Col. Roland K. Charles, M. C., U. S. Army, Deputy Commander, Brooke Army Hospital, Fort Sam Houston, Texas.

3:30- 5:30 **Workshop Session**
Conferees to be divided into four groups to consider problems and recommended courses of action in following emergency situations:

I—Small localized disaster (100 casualties or less from train wreck, plant fire, collapsed building, etc.; well localized situation with fixed installations intact and medical teams available). Group Leader—J. G. Fred Hiss, M.D., Chairman, Committee on Emergency Medical Service and Civil Defense, Medical Society of the State of New York, Syracuse, N. Y.

II—Natural disaster (over 100 casualties from flood, hurricane, tornado, large fires, etc.; involves large area with fixed installations which may be intact or destroyed or distant from scene of casualties). Group Leader—Mr. John N. Hatfield II, Secretary, Committee on Disaster Planning, American Hospital Association, Washington, D. C.

III—Epidemic disaster, including bacterial or chemical attack hazards. Group Leader—Alexander D. Langmuir, M.D., Chief, Epidemiology Branch, Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga.

IV—Large-scale disaster involving radiation hazards (reactor plant explosion, sabotage, or enemy attack). Group Leader—Paul S. Parrino, M.D., Director, Medical Care Division, Federal Civil Defense Administration, Battle Creek, Mich.

6:15- 7:15 **Social—Suite 440**

SUNDAY—NOV. 10, 1957

9:00- 9:30 **Civil Defense Motivation**
Cortez F. Enloe Jr., M.D., Member, Committee on Civil Defense, Council on National Defense, A. M. A., New York City.

9:30-10:30 **Report of Workshop Sessions**
Dr. Hiss, Presiding.
Group I—Dr. Hiss
Group II—Mr. Hatfield
Group III—Dr. Langmuir
Group IV—Dr. Parrino

10:30-11:00 **A. M. A. Program on Asian Influenza**
Harold C. Lueth, M.D., Chairman, Committee on Civil Defense, Council on National Defense, A. M. A., Evanston, Ill.

11:00-11:30 **A. M. A.—FCDA Study Project Report**
Earle Standlee, M.D., Staff Director, Special A. M. A.—FCDA Study Project, A. M. A.

11:30-12:30 **Selected Film Screening**
"Treatment of Nerve Gas Casualties"
"Operation Pill Hill"

12:30- 2:00 **Luncheon—Embassy Room—Mezzanine Floor**

2:00- 2:30 **Radiological Aspects of Radiation Fall-out—Current Concepts**
Crawford F. Sams, M.D., Medical Officer, FCDA Radiological Study Project Civil, University of California, Berkeley.

2:30- 3:30 **Hurricane Audrey 1957**
General Preparedness Planning
Joseph A. Hertell, M.D., Area Medical Officer, Director, Blood Program, Southeastern Area, American National Red Cross, Atlanta, Ga.
Hospital Operational Preparedness
Mr. Joseph W. Hinsley, Administrator, Lake Charles Memorial Hospital, Lake Charles, La.
Role of County Medical Society
Leonard K. Knapp, M.D., President, Calcasieu Parish Medical Society, Lake Charles, La.

3:30- 4:00 **Business Session—Adjournment**
Dr. Lade, Presiding.

COUNCIL ON MEDICAL SERVICE

This is the ninth of a series of papers on various aspects of aging. Each paper has been prepared for the Committee on Aging by an authority in the field. When completed, the series will be published in booklet form.

POSTURE IN THE AGING AND AGED BODY

Joseph T. Freeman, M.D., Philadelphia

"Animals have shapes and forms. Only man has posture . . ."[1] The routinely renewed achievement of the complex mechanisms of the upright posture affirms the substantial quality of this human adaptation. This evolutionary accomplishment attracted a roster of students whose observations parallel the most advanced thinking of the past three centuries. A review of these well-documented facts would serve, without novelty, only to refresh memory. The many details limited specifically to the effects of aging on posture, however, are quite a bit less a part of the common knowledge. Postural modifications in the aging body consist of a combination of changes that must occur in harmony. There are anatomic alterations in the skeleton to which the organs of the modified cavities must make accommodation. Adjustments in such contours and parenchymal contents exact a balance in physiological activities. These morphologic and reactive changes are reflected in appropriate biochemical tolerances and blood and tissue levels in the establishment of an effective equilibrium for survival. The tripartite progression must operate in a way that contributes to the older individual's functional adequacy.

The association between the nature of a structure and the character of its activities was recognized by Keith,[2] whose conclusion was an historical culmination of the fact that form probably is a result of its functions. This is not the sort of thought that does much rousing anymore, but it affirmed theories of development that had long been in formulation. Progress from prone to orthograde and finally to a plantigrade status required multiples of changes. A superior method of survival based on the two-footed stance involved compromises in organ size and relationships which had to be threshed out in cycles of evolution. Pulmonary organs, for example, had to be coupled with a thoracic configuration compatible with the upright state. Cerebral blood flow is determined, among other things, by intravascular pressure; the effect of blood carbon dioxide concentration on cerebrovascular resistance; and reflex effects of the fluctuating intracarotid pressures on these vessels.[3] The position of the head, whose shape is a result, in part, of such forces, affects these forces.

Persistence of well-being and length of survival are determined by the ability of organs to adjust with accumulative age. Adequate functions cannot be maintained if there is a break in the continuous liaison of the organs that mediate them. This is as true in a single life cycle as in the phylogeny of the species. Just as these chest and skull and other systems evolved in the many aspects of erect man, lesser adaptations for such changes as aging in the individual's life had to be perfected. The form, to repeat, follows all of the elements of its function.

Structural Changes and Aging

"A number of structural changes are invariable accompaniments of aging."[4] Posture is determined by the total lineaments of the vertebral column. The configuration of curves from skull to coccyx is the quotient of many apposing forces. During maturation there is a balanced series of conformations to the erect state that is followed by piecemeal deterioration in average senescence. Early changes due to age are degeneration of the intervertebral disk and modifications in the apophysial joints; these changes can occur at a variable rate in different components of these structures from individual to individual. One result is a reduction in total columnar resiliency and of the ability of counterpoised muscle groups to maintain accustomed alignment, as gravity is resisted less effectively by the frame of an older person. Although many aging and aged people maintain satisfactory posture, asymmetrical and prior wearing of the anterior arc of intervertebral separation generally results in the accentuation of curves and osteoblastic proliferation at points of contact. Such degenerative bone disease and osteophytosis in sites of unusual ligamentous strain may deter the rate of loss of the basic vertebral contour. It is quite likely that "spondylosis is the commonest disease to which the vertebral column of man is subject . . . as a physiological response to chronic mechanical stimuli."[5]

Clinical Assistant Professor of Medicine, Woman's Medical College of Pennsylvania, and member of the Commission on Geriatrics, Pennsylvania State Medical Society.

Members of the Committee on Aging are Drs. H. B. Mulholland, Chairman, Charlottesville, Va.; Edward L. Bortz, Philadelphia; Henry A. Holle, Austin, Texas; Wingate M. Johnson, Winston-Salem, N. C.; Theodore G. Klumpp, New York; Frederick C. Swartz, Lansing, Mich.; and Cecil Wittson, Omaha. Committee Staff: Mr. George W. Cooley, Secretary, and Mr. Herbert B. Norton, Research Assistant.

From the unmarred, undiseased state of the nontraumatized healthy young person in the fulness of his postural heredity, a host of changes emerge in "natural" aging. There is increased curving of the cervical region compensated by the counterbalancing head.[6] The thoracic bow is increased, with the convexity to the dorsum, while the lumbosacral section tends to a reverse change of direction. The sacrococcygeal articulation becomes more acute as many strains are brought to a focus in this union of the two sets of bones where there is balanced "a bulky superstructure on a small base." In general, elastic tissue properties seem to undergo the initial impairment followed by bone changes, the density or atrophy of which is related to degrees of use and abuse. The sternal bones, meanwhile, fuse into one, held at a greater distance from the dorsal column by the tendency of horizontally rotated ribs to maintain a fixed inspiratory position. As points of muscle origin and insertion, as well as functions, shift, muscles are molded into new shapes as more effective adaptations to gravity. The loss of tone of abdominal muscles unsupported by more rigid means inclines the region to a gravid sag which promotes accumulative defects. The pelvis, as a structure of support and balance, is compressed vertically and expanded laterally. The relationship of the femoral head to the enshallowed acetubulum becomes more acute. The short step, bent knee, and shifted center of gravity of the very old, often cane-supported, person is in contrast to the epitome of successful adaptation, the peak of which was passed in late maturity—"in a better understanding of the special structure and the special physiology of the individual . . . the solution of the problem of chronic disease is largely to be found."[4]

The extensor muscle mass of the flexed cervical-occipital region becomes heavier in contrast to the opposed anterior muscles, which become shorter, atrophic, and spastic. Impaired foraminal apertures and the new lines of muscular emphasis compress segmental nerves with the production of various uncomfortable radicular syndromes. There are vascular, musculoligamentous, as well as neurological effects related to the arthritic articulations.[7] The restricted mobility of the cervical component of the mediastinal structures renders it less reliable as a diagnostic index of intrathoracic changes. Impairment of ability to extend the neck limits coughing, swallowing, and other essential movements which are dependent on an expansible portal to the thorax.

In the deepened and widened and less mobile chest, the lungs are emphysematous in an increasing number of instances with a reduction in the total functional units. The intrathoracic structures of the mediastinum are more fixed. As the more rigid chest approaches a position of inspiratory fixation, accessory respiratory muscles become more essential for primary respiratory function as well as the maintenance of negative intrapleural pressure by which the circuit of venus flow against gravity is established. Infradiaphragmatic veins lengthen, become more tortuous, and undergo degenerative changes with calcific deposition. The time for blood return to the vena cava inferior is prolonged.

The diaphragmatic concavity changes and it undergoes orificial impairments as its modified attachments and prime muscle qualities change. There is an age-linked increased incidence of herniations through the esophageal hiatus which has decreased resistance to repeated strains transmitted from above and below.[8] The postural change of kyphosis may be the point of departure for a pathological sequence of such a hernia and chronic hypochromic anemia. In the area where the gastric mucosa is constricted by the annular esophageal opening and irritated refluxly, there is a varying degree of mucosal extravasation of blood for which there is inadequate compensation to maintain a normal blood level with chronic depletion of iron stores.[9]

The accentuated lumbosacral line is reflected in the impaired muscle qualities of the anterior abdominal wall with its droop of poorly resisted intra-abdominal contents and the accumulations of fat in the various planes and the omentum as well as in the retroperitoneal depots. All types of herniations increase, while fluid retention is linked to the hindered venous return which may effect an expansion of the lower body's total extracellular space. The influence of the modified postural dynamics, among other effects, accounts for a more than coincidental increase in the incidence of intestinal diverticuli, hemorrhoids, and varicosities of the extremities.[10]

The less stable upright state is accompanied by essential changes in the organs of support and locomotion. Degrees of joint deformities from hips to arches, neurological changes, and the progression of peripheral arteriosclerotic states belong in the same parcel. The entire picture, from an occasional aching back to the pathetic *marche a petit pas*, is framed by age's structural deterioration. Osteoporosis goes hand in hand with the obvious articulatory changes. "This machinery is constituted, not on an anatomical, but on a physiological basis."[2]

Biochemical Changes and Aging

As cause or result, biochemical changes must be involved in the structural modifications. Prominent among these are the interrelations of carbon dioxide retention, water balance, and calcium shifts. It might be theorized that localized changes in carbon dioxide concentration due to structural and activity limitations with age are primary. As venous return is impaired by reduced muscle tone, forced or spontaneous reduction in activities, altered pulmonary negative pressure, as well as a complex of other bearings, there is a tendency for dependent parts to be exposed to a lower pH for longer periods of time than nondependent areas. Such zonal differences are, in effect, regions of relative acidosis subject to constant forces of equalization. Water retention apparent as edema is due not only to the back pressures of gravity and osmotic forces but also to higher concentrations of carbon dioxide.[11] Chronic vasodilatation with sensations of burning, restless legs, and an increased incidence of nocturnal leg cramps may be part of this pattern. Acidosis is associated with increased calcium excretion, and intraosseous as well as extraosseous structures would be subject to regional differences in pH. For simple mechanical reasons or in the many chemical changes subsequent to release from continued dependency (of which adjustment to the carbon dioxide levels is an important consideration) certain muscle groups may become sensitized and respond with tetanic reactions.[12] In fact, the entire problem of calcium metabolism as part of the many influences of postural changes with age could be subjected to survey. Clinically, it is a common observation that the lower tibia, particularly in older women but also in many men, is very sensitive to pressure. This is a region which, by position, is articularly susceptible to many bone-altering effects, of which higher carbon dioxide levels may be thought to be one.

Changes in posture and muscle tone with dilating vascular effects underlie less labile fluxes in blood volume, which are reduced 15% normally by standing for 30 minutes.[13] In older persons, shifts in blood volume, dilated vascular tree, and reduced vessel elasticity are reflected in the increased incidence of recumbent angina, pulmonary edema, acute paroxysmal nocturnal dyspnea, and the motor agitative features of cerebral anoxia. The last are interpreted too often as primary cerebral impairment when a temporary physiological inadequacy unmasks for the time a generally compensated state of chronic brain syndrome.

There are many other influences in addition to these that are operating in such abnormal conditions. Proteinuria[14] is significantly increased in persons in the upright position, and there is a still higher incidence in the lordotic state. Diastolic pressure rises when a person stands, and it falls with recumbency. In the presence of kyphosis[15] there is a reduction in alveolar ventilation, reduced arterial oxygen tension, increased pulmonary vascular pressure, and a tendency to a rise in pulmonary vascular pressure. Vital capacity and maximum breathing capacity are reduced in direct relation to age. Circulation time increases and venous pressures tend to be higher. Such changes affect and are influenced also by shifts in electrolytes. In brief, as Sodeman stated, "the mechanisms of homeostasis have physiologic limitations."

Obviously no single influence, such as postural change, can be blamed for the innumerable adjustments undergone in the aging body whose concert of successful and complicated progressions must be made in synchrony. The danger, by far, is not that too much will be ascribed hypothetically to structural balances but that too little will be accepted as related to all that is involved in such efforts in a life cycle.

Comment

Is there any evidence of correlation in good posture, well-being, the incidence of certain pathological conditions, and length of survival? Clinical impressions suggest an affirmative answer. Better postured individuals probably have fewer defects, enjoy better health, and live longer than those with a seriously distorted skeleton. Postural aging is attended by new anatomic zonings and accommodating physiological states which can attain a pathological status reflected in new blood and tissue chemical constants. The extensive range of variable change only suggested in this arbitrarily limited synthesis depends on the degree of physical deformity and inherent abilities to make balanced adjustments. Lesser changes would incite lesser degrees of reaction and have a reduced influence on tenure. With the rise in postural impairments, there is a curtailment of resistance to physical and chemical stresses. One familiar example is the pattern of kyphoscoliotic cardiopulmonary disease in which the use of morphine, for example, may have undue effects. This vascular limitation based on a gross thoracic change is an extreme form, lesser stages of which have proportional effects.

In linking body limitations to structural deficiencies, there emerges the awareness of the need to promote techniques that will be more effective in resisting average trends of aging. If the morphologic, physiological, and biochemical changes based hypothetically on structure alterations can be allied inextricably to body form and function, a single question emerges, namely, will a conscious and persistent effort to maintain good posture in the face of common senescent regressions be able to impede any or all of the implied consequences? Occasional long survival despite severe architectural aberrations indicates a capacity of the body to arrive at a working premise, but this is rare. In general, there is a correlation in body structure, health, and span of survival.

As a pragmatic as well as a therapeutic feature in medical care, there are considerations that would best be undertaken prophylactically at an age before inalterable geriatric changes occur and yet be useful after the occurrence of some degree of them. These are (1) the promotion of the best postural state compatible with the body's older capacities and (2) the utilization of purposeful activities, correct nutrition, anabolic supplementation, and training in correct body alignment as a counterpart to natural adaptations made by the aging and aged body in its own defense. An over-diligent effort to correct posture in the face of a certain established equilibrium might seem justified empirically but may be unsound physiologically, particularly if

all inpatients discharged during the month; the average length of stay was longer—10.7 days versus 9.1 days—for accident inpatients.

3. Of the total inpatients discharged during the month who were hospitalized because of accidents, 65.2% were males—11.3% under 15 years of age, 35.6% in the age group 15-44, 13.1% in the age group 45-64, and 5.2%, 65 years and over; and 34.8% were females—5.8% under 15 years of age, 12.4% in the age group 15-44, 8.6% in the age group 45-64, and 8.0%, 65 years and over.

4. Although our term "emergency room" was subject to some misinterpretation, 31.8% of all patients (outpatients and inpatients) seen in emergency rooms were accounted for by accidents.

5. During the reporting year (ending Sept. 30, 1955, for most hospitals) the care of accident patients required expenditures of 311 million dollars, or 7.4% of the total annual expenses of the 6,000 general and special hospitals. (Presumably the total for 1957 involved many more millions of dollars.)

6. The annual payroll expense of these hospitals for the treatment of accident cases was 198 million dollars, or 7.3% of the total payroll.

7. The personnel devoted to the care of accident cases totaled 68,200, or 6.7% of total personnel.

8. The accident cases required the use of 50,500 beds, or 6.7% of the total beds.

Depending upon the criteria used in the measurements, we conclude that the treatment of accident cases accounted for 7 to 8% (6.7 to 8.1%) of the burden on the general and special hospitals of the United States. Presumably the burden on physicians came within the same range. The burden of accident cases treated by physicians in the home and in the office will be estimated in a later bulletin in this series.

This and other studies in the series could not have been made without the splendid cooperation of the medical staffs, the administrators, and the medical record librarians of the responding hospitals. Since our previous studies have shown that the burden of another nondisease category, pregnancy, is approximately 18% of one total, we conclude that the treatment of disease in general and special hospitals of the United States is roughly three-fourths of the total burden.

MEDICINE AND THE LAW

Hospital Records: Limitations on Admissibility.—This was an action for damages for injuries resulting from the alleged malpractice of the defendant physician. From a judgment in favor of the plaintiff, the physician appealed to the Supreme Court of Washington.

It appears from the report of this case that the plaintiff contended that the defendant physician failed properly to diagnose and subsequently treat a child's illness so that the child suffered from encephalitis following diphtheria. In order to establish her claim, the plaintiff offered in evidence a hospital record made about two years after the alleged injury and at a time when the child was taken to a hospital for treatment for epilepsy by a doctor other than the defendant. The present malpractice suit had already been filed. The principle issue involved in this case was as to the admissibility of the hospital record.

The plaintiff contended that the record was admissible under the uniform business records act which provided: "A record of an act, condition, or event, shall insofar as relevant, be competent evidence if the custodian or other qualified witness testifies to its identity and the mode of its preparation, and if it was made in the regular course of business, at or near the time of the act, condition or event, and if, in the opinion of the court, the sources of information, method and time of preparation were such as to justify its admission." Objected to most seriously was that portion of the record containing "Diagnosis: Convulsive disorder secondary to residuals of encephalitis following diphtheria."

A business record, said the Supreme Court of Washington, is admissible only insofar as it represents a record of a contemporaneous act, condition, or event. The uniform business records act, as applied to this case, admits the record as evidence of the following: (1) the event (the fact that the child was brought to the doctor because of illness), (2) the condition (the doctor's present determination that the child was suffering from epilepsy), and (3) the act (the doctor's treatment of the illness). A diagnosis of epilepsy is a relevant part of the business record. However, a determination that the epilepsy was the result of diphtheria is a conclusion based upon speculation and conjecture, and does not constitute an "act, condition, or event," within the purview of this statute. We hold that a medical opinion as to causation, which is not the result of an observed act, condition, or event, cannot be established by a business record.

In view of the fact that the record had been admitted by the trial court, the judgment of the trial court in favor of the plaintiff was reversed and a new trial ordered. *Young v. Liddington, 309 P(2) 761 (Washington, 1957).*

MEDICAL NEWS

ALABAMA

Name Chairman of Department of Medicine.—Dr. Walter B. Frommeyer Jr. has been appointed chairman of the department of medicine of the Medical College of Alabama, Birmingham, succeeding Dr. Tinsley R. Harrison, who will continue as professor in the department. Dr. Frommeyer became assistant dean in July, 1954. For three years, he was assistant professor of medicine at the Medical College and director of the blood bank and tumor clinic at University Hospital, and formerly, was a research fellow at the Thorndike Memorial Laboratory, Harvard University Medical School, Boston, for one year.

Personal.—Dr. William G. Thuss Jr. has been appointed the first associate professor of industrial medicine in the department of preventive medicine and public health, Medical College of Alabama, Birmingham. A native of Birmingham, Dr. Thuss received the doctor of science degree in industrial medicine from the University of Cincinnati in 1956. He is also medical director of Hayes Aircraft Corporation.

DISTRICT OF COLUMBIA

Diagnostic Building at Georgetown University.—Construction began Sept. 16 on the new Gorman Diagnostic Building in the Georgetown University Medical Center. The 3-million-dollar structure will stand at the rear of the present hospital building. The building is named to honor the late Rev. Lawrence C. Gorman, S. J., Georgetown president from 1942 to 1949. The new structure will house diagnostic, outpatient, and research facilities and will free space in the existing hospital to provide 40 additional rooms for patients. The exterior walls will be of brick, limestone, and glass in a design which will be followed in all future buildings in the center. Funds for the building came from several sources, including the Ford Foundation, the Geschicketer Foundation, and federal grants.

GEORGIA

Appoint Chairman of Pediatrics Department.—Dr. Victor C. Vaughan III has been appointed chairman, department of pediatrics, Medical College of Georgia, Augusta. Dr. Vaughan has served as assistant resident, New Haven Hospital of Yale University, New Haven, Conn.; research fellow, Harvard Medical School, Boston; assistant professor, Yale University School of Medicine, and associate professor of pediatrics, Temple University School of Medicine, Philadelphia. He is a member of the American Academy of Pediatrics, the Society for Pediatric Research, Philadelphia Pediatric Society, the American Society of Human Genetics, and the American Federation for Clinical Research, and a diplomate of the American Board of Pediatrics.

ILLINOIS

Personal.—Dr. Ruth E. Church has been appointed deputy director in charge of the Division of Hospitals and Chronic Illness of the Illinois State Department of Public Health. She succeeds Dr. G. Howard Gowen who resigned to accept a position with the International Cooperation Administration in Santiago, Chile.——Dr. Elvin L. Sederlin, Helena, Mont., has been appointed director of the Adams County Department of Health, succeeding Dr. Harry O. Collins, who resigned in 1956, following 25 years of service.

Chicago

Medical Film Wins International Awards.—Dr. Hans von Leden and Paul Moore, Ph.D., Northwestern University Medical School, have received two international awards based on a motion picture, "The Function of the Normal Larynx." The first award, the Minerva, was presented at the International Film Festival for Medical and Scientific Films, Turin, Italy. The second award, a silver robot, was presented at the III International Congress for Specialized Cinematography, Rome, Italy, for the perfection of a new technique in recording laryngeal function by high-speed photography. The motion picture portrays a new method of studying laryngeal functions.

IOWA

Personal.—Dr. James F. Speers has been appointed director of the Des Moines Health Department. Dr. Speers practiced for three years in Titusville, Fla. He holds a master of public health degree from the Medical College of South Carolina.

Dr. Peterson Honored.—Dr. Frank R. Peterson, of Cedar Rapids, has been honored as recipient of the 1957 distinguished service award, given by the Mississippi Valley Medical Society. Dr. Peterson, past-president of the society, was formerly head,

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Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

department of surgery, State University of Iowa's College of Medicine, Iowa City, and is president of the Iowa State Board of Examiners.

MASSACHUSETTS

Cutter Lecture in Boston.—Dr. Charles M. Fletcher, senior lecturer in medicine, Postgraduate Medical School of London, and formerly director of the Medical Research Council's Pneumoconiosis Research Unit, will deliver the Cutter Lecture on preventive medicine Oct. 29 at 5 p. m. in Amphitheater D, Harvard Medical School, Boston. Dr. Fletcher will speak on the "Epidemiology of Chronic Disabling Respiratory Disease."

MICHIGAN

Personal.—Dr. Osborne A. Brines, professor of pathology, Wayne State University Medical School, Detroit, was elected president of the International Society of Clinical Pathology at its triennial session in Brussels, recently. The society, founded 10 years ago, is made up of constituent societies from 23 countries. Dr. Brines, past-president of the American Society of Clinical Pathologists, was vice-president of the international group from 1949 until his election to the three-year presidency last July. The next meeting of the society will be held in Madrid in 1960.

MICHIGAN

University Grants.—More than a million dollars in gifts and grants to Wayne State University recently was accepted by the university's Board of Governors. Largest single grant was $500,000 from the National Institutes of Health, an agency of the U. S. Public Health Service. When matched by funds from the university, the grant will be used for construction of a "Life Science Research Center." A $425,000 grant came from the estate of the late Richard Cohn, Detroit advertising and publishing executive. The endowment will be used toward the construction of a new College of Nursing and Graduate School building which will bear Mr. Cohn's name. Other gifts and grants in research, educational programs and student-aid funds totaled $366,300. A major portion of $225,994 went to medical research and training programs. Included was a grant from the Michigan Heart Association of $44,677 to be used in continuing eight research projects. The Rands Family Foundation gave $10,000 to continue research fellowships in the field of geriatrics.

MONTANA

State Medical Election.—At the annual meeting of the Montana Medical Association the following officers were elected: president, Dr. John A. Layne, Great Falls; president-elect, Dr. Herbert T. Caraway, Billings; vice-president, Dr. Leonard W. Brewer, Missoula; secretary-treasurer, Dr. Theodore R. Vye, 412 North Broadway, Billings, Mont.; and assistant secretary-treasurer, Dr. William E. Harris, Livingston. The next annual meeting of this association will be in Billings, Sept. 11-13, 1958.

NEBRASKA

Personal.—Dr. Henry J. Lehnhoff Jr., Omaha, has been named medical director of Woodmen of the World Life Insurance Society. The appointment fills the vacancy created by the death of Dr. Herbert B. Kennedy, who held the post for 22 years. Dr. Lehnhoff is senior member of the staffs of Clarkson and Methodist hospitals and is also a member of the staffs of Lutheran and Immanuel hospitals.——Dr. Archibald R. McIntyre, chairman, department of physiology and pharmacology, University of Nebraska College of Medicine, Omaha, has returned from a summer trip up the Amazon River of South America. Dr. McIntyre attended the first International Symposium on Curare at Rio de Janeiro at the invitation of the Brazilian government and UNESCO.

NEW YORK

Reiss Memorial Lecture.—The New York Institute of Clinical Oral Pathology announces the sixth Herman L. Reiss Memorial Lecture to be held at the New York Academy of Medicine Building Oct. 28, 8:30 p. m. The essayist will be Dr. Iago Galdston, secretary, Medical Information Bureau, New York Academy of Medicine, who will lecture on, "The Birth and Death of Specialties." Members of the medical, dental, and allied professions are invited.

Personal.—Dr. George W. Dana has been appointed director of the North Shore Hospital, Manhasset, replacing John M. Danielson, who resigned to become administrator at the Evanston Hospital, Evanston, Ill. He is presently medical director of the Bingham Associates Fund in Boston and is also medical staff director of the New England Center Hospital, assistant professor of medicine, Tufts University School of Medicine, and a member of the faculty of Harvard University.

General Practice Meeting.—The ninth annual scientific assembly of the New York State Academy of General Practice will be held Oct. 21-23 at the Barbizon-Plaza Hotel, New York City. George R. Metcalf, New York State senator, 48th district, will present "Economic Safeguards Over 65," Oct. 22. The program includes the following topics: atomic medicine, geriatric problems, dislocations and fractures (closed-circuit TV program), newer chemotherapeutic aids in nervous and mental disorders, and obstetrical program for the GP. The following topics by out-of-state speakers are scheduled:

Applications of Atomic Medicine in Modern Diagnosis, Dr. George V. Taplin, director of atomic medicine research, University of California at Los Angeles Medical School.

The Role of the GP in Radioisotope Therapy, Dr. George Meneely, president, American College of Cardiology.

Psychological Aspects of the Aging, Dr. William Malamud, professor of psychiatry, Boston University.

Tremor in the Aging–Symptom or Disease, Dr. Albert England, assistant in urology, Harvard Medical School, Boston.

The Mood Disorders, Dr. Francis J. Braceland, president, American Psychiatric Association.

The Schizoid and Schizophrenic Disorders, Dr. Raymond W. Waggoner, director, Neuro-Psychiatric Institute, University of Michigan Medical School, Ann Arbor.

Special topics, rehabilitation medicine and health program in atomic medicine, will be presented Oct. 24. Technical and scientific exhibits are planned, and a ladies' program has been arranged. The banquet will be Oct. 22, 7 p. m. For information write the New York Academy of General Practice, Dr. Raymond S. McKeeby, Secretary-Treasurer, 84 Main St., Binghamton, N. Y.

New York City

Personal.—Dr. Robert B. McGraw has retired as chief of the psychiatric clinic, Vanderbilt Clinic, but will continue as a member of the executive committee of the department. Dr. Robert Senescu was appointed Chief of the Vanderbilt Psychiatric Clinic as of July 1.

Dr. Cecil Receives Award.—Dr. Russell L. Cecil has been honored as recipient of the 1957 honor award, a plaque and gold medal, given by the Mississippi Valley Medical Society. Dr. Cecil is emeritus professor of medicine, Cornell University College of Medicine, and editor of "A Textbook of Medicine." The citation in connection with the award reads in part: "From your laboratory came the streptococcus agglutination test, progenitor of the current serological tests for rheumatoid arthritis; from your vision arose flourishing organizations and from your zeal, the inspiration to young investigators, all dedicated to the conquest of arthritis. In 1926, you made a great contribution to medical education, the first multiple author textbook of medicine in this country."

Grants for Training in Pathology.—The department of pathology, New York University-Bellevue Medical Center, has been awarded about $450,000 for a five-year period to train physicians for research and teaching careers in pathology. The training program, which began July 1, was made possible through a grant from the National Institutes of Health and will be directed by Dr. Lewis Thomas, chairman, department of pathology of the University College of Medicine.

There are eight research fellowships available at the level of assistant resident. The stipend ranges from $3,600 to $4,500 yearly. In addition, two senior fellowships are available for physicians with more advanced training in the basic sciences on anatomical pathology, with a stipend of $7,500 annually. Information may be obtained from the Dean, New York University College of Medicine, 550 First Ave., New York 16, N. Y.

OHIO

Blankenhorn Memorial Fund.—Establishment of a Marion A. Blankenhorn memorial research fund in the University of Cincinnati department of internal medicine was announced by Dr. Walter C. Langsam, president of the university, following memorial services for the distinguished physician-educator, who died Sept. 3. The memorial will be used for pressing research needs of the College of Medicine and for lecturers on research topics. Dr. Stanley E. Dorst, dean of the College of Medicine, and Dr. Richard W. Vilter, Dr. Blankenhorn's successor as head of the department of internal medicine, will be in charge of the fund. Dr. Blankenhorn was head of the department for 22 years, retiring in 1956.

OREGON

Personal.—Dr. Herbert E. Griswold Jr., associate professor at the University of Oregon Medical School has begun a year's leave of absence to study in England and Sweden. His year of study is made possible through a grant from the American Heart Association and support from the Irwin Memorial Fellowship Fund of the Oregon Heart Association. He will go to the Institute of Cardiology of the National Heart Hospital, London.—Dr. James L. Wooden was honored recently when a "day" in his honor was celebrated in recognition of his 50 years of practice in the city of Clatskanie. A series of talks were featured which recalled Dr. Wooden's years of community practice. He began practice in Clatskanie on Aug. 12, 1907.—Dr. Robert H. Tinker, vice-president and chairman of the education committee, Oregon Chapter, American Academy of General Practice, has accepted a three year appointment to the American Academy of General Practice Commission on Postgraduate Education. Dr. Tinker, who has served for two years as head of Oregon's education committee, is now the northwest regional representative for the national commission.

PENNSYLVANIA

Annual Scientific Day.—The seventh annual scientific day of the Medical Alumni Association of the University of Pittsburgh will be held Nov. 1 at the Mellon Institute in Pittsburgh. The speakers will be Dr. Robert J. Boucek, associate professor of medicine, University of Miami School of Medicine; Dr. Charles F. Wilkinson, professor, department of medicine, New York University School of Medicine; Dr. Charles Dunham, director, division of biology and medicine, Atomic Energy Commission; and Dr. Perry B. Hudson, assistant professor of urology, Columbia University College of Physicians and Surgeons.

Philadelphia

Dr. Sevy Heads Pharmacology Department.—Dr. Roger W. Sevy has been promoted to head the department of pharmacology at the Temple University School of Medicine, succeeding Dr. Dean A. Collins, now research professor of pharmacology. Dr. Sevy has been a member of the faculty since 1954, when he was appointed assistant professor of pharmacology. Last year, he was promoted to a full professorship. From 1947 to 1948, he was a Life Insurance Medical Research Foundation Fellow at the Vermont College of Medicine.

Laboratory for Cancer Studies.—A grant of $150,000 for the construction and operation of a laboratory for biochemical studies in cancer at Hahnemann Medical College has been awarded Dr. Julius Schultz, associate research professor in biochemistry, by the National Cancer Institute. With $102,000 in operating funds guaranteed for the next five years, another grant of $40,000 for additional operating funds is expected. The investigation into the biochemical aspects of cancer will be aimed at understanding the mechanism of cancer formation and at the rational utilization of chemical compounds to inhibit tumor growth.

SOUTH DAKOTA

Annual District Seminar.—The Huron District Medical Society, Huron, announces the third annual Central South Dakota Medical Seminar to be held Oct. 26-27. The first session will open at 8:30 a. m. Oct. 26, the opening day of pheasant-hunting season, with registration at St. John's Hospital Auditorium. The program includes the following topics and speakers:

Extrophy of the Urinary Bladder, Dr. William G. Schultz, Tucson, Ariz.

Salt and Water Therapy in Pediatrics: the Do's and Don'ts, Dr. Edmund C. Burke, department of pediatrics, Mayo Clinic, Rochester, Minn.

Medico-Legal Medicine, Joseph Koucky, L.L.D., Chicago.

Management of Complications of Acute Nephritis, Dr. Burke.

Registration fee of $10 will include the stag dinner Oct. 27. Credit from the American Academy of General Practice is available. Hunting will be done each afternoon. For information write Dr. Fred Leigh, Chairman, Pheasant Hunting Seminar, Huron Clinic, Fourth Street at Kansas Avenue, Huron, S. D.

TEXAS

Muscular Dystrophy Clinic.—A research project. jointly sponsored by the National Muscular Dystrophy Research Foundation, Inc., and the University of Texas School of Medicine, Galveston, will use $250,000 to establish a Muscular Dystrophy Clinic at the university. Initial studies will be made on two muscular dystrophy patients a week, which later will be expanded to include more patients.

PUERTO RICO

New Medical Center.—The Medical School of the University of Puerto Rico will be relocated on a site with four new hospitals, in each of which it will have teaching and research facilities, when a proposed medical center is completed in San Juan. Toward the costs of a comprehensive study to plan the functions and design of the relocated school, the Rockefeller Foundation has appropriated $75,000 to the university.

The new center, comprising cancer, workmen's compensation, municipal, and district hospitals, together with the medical sciences building of the university, will increase the effectiveness of all five institutions by enabling them to pool their resources and coordinate their services. It will also provide the most densely populated area of Puerto Rico with its first centrally located facility for medical care on a large scale.

The study will deal with the space and other functional requirements of the medical school and especially with its relationship to the four hospitals of the center. It will also include a review by the university medical faculty of its teaching aims, taking into account current trends in medical education and their implications for the future. Probable educational developments over the next 10 to 20 years will be considered in formulating plans and building specifications.

GENERAL

Nominations for Nutrition Awards.—Nominations are invited for the 1958 Borden award in nutrition and the 1958 Osborne and Mendel award for research in nutrition. Nominations may be made by anyone and must be submitted by Jan. 1, 1958, to the chairman of the appropriate nominating committee. Membership in the American Institute of Nutrition is not a requirement for eligibility and there is no limitation as to age. For details write the American Institute of Nutrition, Office of the Secretary, Room 9D 20, Building 10, National Institutes of Health, Bethesda 14, Md.

Air Pollution Conference.—A semi-annual technical conference sponsored by the Air Pollution Control Association will be held Nov. 18-19 at the Fairmont Hotel, San Francisco. Theme for the program is "Particles—Liquid and Solid: Their Role in Air Pollution." Speakers' topics include effects of particulates, sampling and evaluation, types and levels of particulates in contaminated atmospheres, and control at source. About 20 papers are scheduled with panel discussions to follow the formal presentations. Registration fee is $15. For information write the Air Pollution Control Association, 4400 5th Ave., Pittsburgh 13.

Grants for Research in Blindness.—The Scientific Advisory Committee of the National Council to Combat Blindness, Inc., is now accepting applications for "Fight for Sight" grants-in-aid, research fellowships, and summer student fellowships. The committee will consider all applications at its annual meeting in June, 1958. The closing date for receipt of completed applications has been advanced to March 1, 1958. Appropriate forms may be obtained by writing the Secretary, National Council to Combat Blindness, Inc., 41 West 57th St., New York 19, N. Y.

Van Meter Prize Award.—The American Goiter Association again offers the Van Meter Prize award of $300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association, which will be held in the St. Francis Hotel, San Francisco, June 17-19, 1958, providing essays of sufficient merit are presented in competition. The essays may cover either clinical or research investigations, should not exceed 3,000 words in length, and must be presented in English. Duplicate typewritten copies, double spaced, should be sent to the Secretary, Dr. John C. McClintock, 149½ Washington Ave., Albany 10, N. Y., not later than Feb. 1, 1958.

Mental Health Study.—The Joint Commission on Mental Illness and Health has announced receipt of a $60,000 grant from the Rockefeller Brothers Fund to further its three-year survey of the nation's mental health needs and resources. The commission said that it would use this contribution to assist in financing a study of the role of religion in mental health. The study is expected to be finished early in 1959. The commission, made up of representatives from 27 national agencies concerned with mental health, is a nongovernmental agency operating under federal and private grants. It is now in the second year of a multi-faceted analysis and evaluation of the United States' needs and resources for promoting mental health. With headquarters in Cambridge, Mass., it has 12 projects in progress.

Scholarships for Neuromuscular Studies.—The Sister Elizabeth Kenny Foundation has announced a continuance of its postdoctoral scholarships to promote work in the field of neuromuscular diseases. The scholarships are designed for scientists at or near the end of their fellowship training in either basic or clinical fields concerned with the broad problem of neuromuscular disease. Kenny Foundation scholars will be appointed annually. Each grant provides a stipend of from $5,000 to $7,000 a year for a five-year period, depending on the scholar's qualifications. Candidates from medical schools in the United States and Canada are eligible. Inquiries should be sent to Dr. Edgar J. Huenekens, Medical Director, Sister Elizabeth Kenny Foundation, 2400 Foshay Tower, Minneapolis 2, Minn.

Society News.—Newly elected officers of the **Academy of Psychosomatic Medicine** include Dr. Ethan A. Brown, Boston, president; Dr. Lester L. Coleman, New York City, vice-president; Dr. Carlos Seguin, Lima, Peru, second vice-president; Dr. William S. Kroger, Chicago, secretary; and Dr. George F. Sutherland, Baltimore, treasurer.——At a recent meeting of the **Southwestern Society of Nuclear Medicine**, the following officers were elected for the coming year: president, Dr. Jack G. S. Maxfield, Dallas; president-elect, Dr. Herbert C. Allen, Houston; first vice-president, Dr. R. C. Norman, San Antonio; second vice-president, Dr. Samuel B. Nadler, New Orleans; secretary-treasurer, Dr. James R. Maxfield Jr., 311 Medical Arts Buliding, Dallas 1, Texas.

Foreign Interns and Residents.—More than 6,700 foreign interns and residents for 88 countries around the world trained in American hospitals last year, according to a survey released by the Institute of International Education. Of this group, 4,753 served as residents and 1,988 trained as interns in hospitals throughout the U. S. They were scattered throughout 44 states, the District of Columbia, Hawaii, and Puerto Rico. However, most of them (75%) were concentrated in 10 states, with one-quarter of them in New York State hospitals, and one-half of them in hospitals in Ohio, Illinois, Massachusetts, Pennsylvania, New Jersey, Missouri, Maryland, Michigan, and Texas. The four hospitals with the largest group of foreign interns and physicians were Bellevue in New York City (114), Boston City in Boston (75), Medical Center in Jersey City (75), and Henry Ford in Detroit (66).

Cruise Congress of Ophthalmologists.—The Pan American Association of Ophthalmology, an organization representing all the countries of the Western Hemisphere, will hold its second cruise congress, Feb. 1-14, 1958, on board the S. S. Queen of Bermuda. The itinerary includes a day each in San Juan, Puerto Rico; Ciudad Trujillo, Dominican Republic; Kingston, Jamaica; Port-au-Prince, Haiti; and Nassau, Bahama Islands. Symposiums, free papers, motion pictures, seminars, and exhibits stressing subjects of current interest in diseases of the eye are planned. Meetings will be held on shipboard and also in port cities with local societies of ophthalmologists. There will be opportunities to visit hospitals and to meet the staffs of medical schools in the islands. For information write Mr. Leon V. Arnold, 33 Washington Square West, New York 11, N. Y.

Rehabilitation Fund.—The World Rehabilitation Fund, a voluntary agency, is sponsoring international rehabilitation projects throughout the world. Dr. Howard A. Rusk, New York, is its chairman. One of the fund's early projects is technical assistance in developing rehabilitation services in the Philippines. Two shipments of artificial limbs have already been made to the islands, and the American President Lines has made available funds for a fellowship through which a Philippine physician is enabled to receive advanced training in rehabilitation and physical medicine in the United States. Rehabilitation personnel from other countries have been assisted to study in the United States, books and periodicals have been provided, rehabilitation demonstrations and conferences have been sponsored in various countries, and some artificial limbs have been provided for Thailand.

Symposium on Cancer of Head and Neck.—The American Cancer Society, Inc., will present its annual scientific session at the Park Sheraton Hotel, New York City, Oct. 28-29 with the theme "Cancer of the Head and Neck." Dr. David A. Wood, president of the society, will present an address Oct. 28. Planned discussion topics include: pathological diagnosis of lesions of the oral cavity; problems of anesthesia in surgery of head and neck cancer; and management of lip cancer. Three panel discussions are scheduled: problems in thyroid cancer, moderated by Dr. Thomas J. Anglem, Massachusetts General Hospital; management of cancer of the tongue, moderated by Dr. Danely P. Slaughter, University of Illinois College of Medicine, Chicago; and cancer of the larynx, moderated by Dr. Chevalier L. Jackson Jr., Temple University School of Medicine, Philadelphia. Physicians and members of allied professions are invited. For information write the American Cancer Society, Inc., 521 West 57th St., New York 19.

Prof. A. P. Mathews Dies.—Albert Prescott Mathews, Ph.D., former chairman of the department of physiology at the University of Chicago, died Sept. 21 at a nursing home in Albany, N. Y., aged 85. Dr. Mathews was born in Chicago in 1871. He became an assistant in biology at the Massachusetts Institute of Technology in 1892; assistant professor at Tufts College Medical School, Boston, in 1899; instructor in physiology at Harvard Medical School, Boston, in 1900; assistant professor of physiological chemistry, University of Chicago in 1901, and was chairman of the department of physiology there from 1909 to 1916. He served as captain in the Quartermaster Corps of the Army in World War I, then became professor of biochemistry at the University of Cincinnati, from which position he retired in 1939. For many years, Dr. Mathews was chairman of the physiology department at the Marine Biological Laboratory, Woods Hole, Mass. He was the author of textbooks and numerous articles in scientific journals.

Heart Association Meeting.—The 13th annual scientific session of the American Heart Association, commemorating the tercentenary of William Harvey, will be held Oct. 25-28 at the Hotel Sherman, Chicago. The Lewis A. Conner Memorial Lecture, "Rheumatic Heart Disease—A Challenge," will be presented by Dr. Charles H. Rammelkamp Jr., Cleveland. The George E. Brown Memorial Lecture, "Current Evaluation of the Thrombosis Problem," will be given by Dr. Nelson W. Barker, Rochester, Minn. A symposium on heart sounds and murmurs is scheduled for Oct. 25, with Dr. Victor A. McKusick, Baltimore, as chairman. The program includes the following panel discussions and moderators:

Prevention and Management of Cardiovascular Emergencies, Dr. Howard B. Sprague, Boston.
Unsettled Clinical Questions in the Management of Cardiovascular Disease, Dr. Louis N. Katz, Chicago.
Present Status of Lipid Metabolism and Atherosclerosis, Dr. Herbert Pollack, New York City.
Community Service—Its Nature and Its Significance for Heart Associations, Dr. Ray E. Trussell, New York City.

The annual dinner Oct. 27 will feature Mr. Ralph Edwards as guest of honor. For information write the American Heart Association, 44 E. 23 St., New York 10.

Allergy Meeting in Charleston.—The 12th annual meeting of the Southeastern Allergy Association will be held Nov. 1-2 at the Fort Sumter Hotel, Charleston, S. C. Dr. William B. Sherman, president, American Academy of Allergy, will speak on "Non-Immunologic Factors in Allergic Reactions" and Dr. Orville Withers, president, American College of Allergists, will speak on "The Problem of Food Allergy." The program includes the following topics and speakers:

Cardiac Allergy, Dr. Raymond Arp, Atlanta, Ga.
Allergic Vasculitis, Dr. William A. Thornhill Jr., Charleston, W. Va.
Immunology, Dr. Oscar Swineford Jr., Charlottesville, Va.
Hodgkin's and Allergy, Dr. Jack M. Rose, Houston, Texas.
Mechanisms Concerned with Dysponea in Patients with Pulmonary Disease, Dr. John Guerrant, Charlottesville, Va.
Tranquilizers in Patients with Emphysema, Dr. Oscar Hansen-Pruss, Durham, N. C.
Potassium Iodide Sensitivity, Dr. Lamar Peacock, Atlanta.
Vitamin and Mineral Balance, Dr. Paul Coughlin, Tallahassee, Fla.
Insect Allergy, Dr. Carl Jones, Atlanta.

A clinical-pathological conference is scheduled for the morning of Nov. 2. A cocktail hour and banquet will be held the evening of Nov. 1. For information write the Southeastern Allergy Association, Dr. Katherine B. MacInnis, Secretary-Treasurer, 818 Albion Road, Columbia, S. C.

Meeting of Inhalation Therapists.—The annual meeting of the American Association of Inhalation Therapists will be held Nov. 4-8 at the Hotel Hollenden, Cleveland. Dr. Thomas D. Kinney, president, Cleveland Academy of Medicine, will present an address Nov. 4. The following panel discussions are scheduled: pressure breathing, inhalation therapy in catastrophe, oxygen tent therapy, and organizing and maintaining an inhalation therapy department. The program includes the following luncheon speakers and subjects:

Inhalation Therapy and the Practice of Medicine, Dr. Henry A. Zimmerman, director, Coakley Cardiovascular Laboratory, St. Vincent's Charity Hospital, Cleveland.

Civil Defense Training and Coordination for Inhalation Therapists, Dr. Paul S. Parrino, director, Medical Care Division, Federal Civil Defense Administration, Battle Creek, Mich.

The Scientific Method and Current Research in Inhalation Therapy, Dr. Max Sadove, head, division of anesthesiology, University of Illinois, Research and Educational Hospitals, Chicago.

Establishing the Inhalation Therapy Department at Lakewood, Dr. Walter R. Katzenmeyer, director, departments of physical medicine and inhalation therapy, Lakewood Hospital, Lakewood, Ohio.

A trip to Western Reserve University Hospital for demonstration of resuscitation and emergency therapy and display of equipment is planned. Scientific exhibits are scheduled. For information write the American Association of Inhalation Therapists, 332 South Michigan Ave., Chicago 4.

Fellowships in Respiratory Diseases.—The medical section of the National Tuberculosis Association, the American Trudeau Society, provides a limited number of fellowships to promote the training of clinicians, medical teachers, and scientific investigators in tuberculosis and respiratory diseases. Awards are open to citizens of the United States for work within this country. Candidates holding the degrees of M.D., Ph.D., or Sc.D., are eligible making possible continuation of graduate study on respiratory diseases in an approved hospital or medical center. Residency in an approved hospital under such a fellowship will be credited by the American Board of Internal Medicine toward certification in internal medicine and pulmonary diseases. Predoctoral fellowships are also offered to graduate students who hold a bachelor's degree and are working on a research project for an advanced degree other than an M.D. Each applicant must have the approval of the head of the department under whom he expects to work. Fellowships are granted for one year. Not more than two renewals will be considered. Fellowship applications must be received by Jan. 1.

A few fellowships at a higher level of training and award are offered to specially qualified candidates with an M.D. degree who have been assured of a continued teaching or research appointment upon completion of training. Trudeau fellowships are awarded for one year but may be renewed up to a total period of four years. For information write the Director of Medical Education, American Trudeau Society, c/o The Henry Phipps Institute, Seventh and Lombard Streets, Philadelphia 47, Pa.

Pediatric Residency Fellowships.—The American Academy of Pediatrics will grant 12 or more fellowships to pediatric residents for the fiscal year 1958-1959 and covering a period of six months to one year. The fellowships have been created to enable young physicians in the United States and Canada, who are in financial need, to complete their pediatric training. They carry a stipend of $500 to $1,000, depending on the length of time required to complete training and the need. The fellowships have been made possible by a grant to the academy from Mead Johnson & Company and will be granted as of July 1, 1958. The deadline for receipt of applications will be March 1, 1958. Requirements for the awards are as follows: (1) a letter from the chief of service indicating that the proposed individual will have completed by July 1, 1958, one year of pediatric residency approved by the American Board of Pediatrics; that the resident has performed his work ably; and that there is real need for financial assistance; (2) a letter from the resident requesting the fellowship stating that he intends to enter pediatric private practice at the conclusion of the residency training required for certification by the American Board of Pediatrics. Consideration will be given to geographic spread of appointments, and preference will be exhibited for well-qualified but smaller training centers. Members of the Committee of Residency Fellowships of the academy will make final decision on the granting of the awards. For information write the American Academy of Pediatrics, 1801 Hinman Ave., Evanston, Ill.

Awards in Radiological Research.—The National Academy of Sciences–National Research Council announces on behalf of the James Picker Foundation the availability of funds in support of radiological research. Applications are reviewed by the Committee on Radiology of the council's division of medical Sciences. The program is oriented toward, but not necessarily limited to, the diagnostic aspects of radiology. Support is not restricted to citizens of the United States or to laboratories within this country. Three specific types of support are offered:

(1) Grants-in-aid are designed to encourage investigations offering promise of improvement in radiological methods of diagnosis or treatment of disease. Research grants are awarded to institutions, rather than to individuals.

(2) Grants for scholars are a transitional form of support, designed to bridge the gap between the completion of fellowship training and the period when the young scientist has demonstrated his competence as an inde-

pendent investigator. The application is submitted by the institution on behalf of the prospective scholar. If the request is approved, a grant of $6,000 per year will be made directly to the institution as a contribution toward the scholar's support, or his research, or both. Initial grants are limited to one year, but renewal for two additional years may be recommended.

(3) Fellowships in radiological research are open to candidates seeking to gain research skills leading to investigative careers in the field of radiology. Candidates whose training has been directly in the field of radiology will receive preference under this program. Candidates must hold the M.D., Ph.D., or Sc.D. degree or the equivalent. Preference will be given to applicants who are 35 years of age or less.

Applications in these three categories for the fiscal year 1958-1959 should be submitted by Dec. 1. Information may be obtained from the Division of Medical Sciences, Room 309, National Academy of Sciences–National Research Council, 2101 Constitution Ave., N. W., Washington 25, D. C.

Radioisotopes Seminar for Pathologists.—A training seminar on the diagnostic use of radioisotopes, sponsored by the American Society of Clinical Pathology and the Oak Ridge Institute of Nuclear Studies, to be held at the Medical Division, Oak Ridge, Tenn., has been set up for certified pathologists and designed to meet the requirements of the Atomic Energy Commission. This seminar will furnish an introduction to radioisotopes for those pathologists who are principally interested in diagnosis but who may be called on to assist and advise on therapeutic uses of radioisotopes. The program will consist of two one-week meetings separated by a three-month interval. The first (basic) week will consist mainly of fundamental techniques and concepts. The second (clinical) week will be held three months after the first and will be devoted mainly to the practical application of these principles. It is expected that in the intervening three months the pathologists will visit laboratories in their home areas which are already approved for the use of isotopes and will assimilate relevant literature. At the end of the second week the medical division will give to participants a statement of preceptorship in the diagnostic uses of radioisotopes. The first week will be held Nov. 11-16, 1957; the second week Feb. 10-15, 1958. Applicants must be certified in either clinical pathology or pathological anatomy, or members or fellows of the American Society of Clinical Pathology, must be United States citizens, and must have a license to practice medicine. Qualified candidates will be accepted in chronological order. Fee for the course is $25. Application should be made to Dr. Oscar B. Hunter Jr., Chairman, Council of Radioisotopes, American Society of Clinical Pathology, Suite 1000, Columbia Medical Building Annex, 915 19th Street, N. W., Washington 6, D. C. The first training seminar will be limited to 16 pathologists.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States, its territories and possessions in the weeks ended as indicated:

	Sept. 21, 1957		Sept. 22, 1956
Area	Paralytic Type	Total Cases	Total Cases
New England States			
Maine	....	....	....
New Hampshire	....	....	....
Vermont	....	....	2
Massachusetts	1	1	6
Rhode Island	....	....	....
Connecticut	1	1	10
Middle Atlantic States			
New York	3	5	46
New Jersey	....	6	21
Pennsylvania	....	....	19
East North Central States			
Ohio	....	9	43
Indiana	....	5	35
Illinois	6	18	63
Michigan	8	42	37
Wisconsin	3	6	38
West North Central States			
Minnesota	2	2	20
Iowa	3	9	46
Missouri	2	2	26
North Dakota	....	1	10
South Dakota	....	....	1
Nebraska	1	1	12
Kansas	....	1	13
South Atlantic States			
Delaware	....	....	3
Maryland	1	1	14
District of Columbia	5	6	1
Virginia	2	5	9
West Virginia	....	1	10
North Carolina	....	4	15
South Carolina	3	5	8
Georgia	1	2	5
Florida	2	4	14
East South Central States			
Kentucky	5	6	10
Tennessee	3	6	7
Alabama	4	7	1
Mississippi	....	....	15
West South Central States			
Arkansas	1	2	7
Louisiana	2	4	13
Oklahoma	1	5	7
Texas	5	8	27
Mountain States			
Montana	1	1	....
Idaho	....	....	2
Wyoming	....	1	1
Colorado	....	1	10
New Mexico	1	2	2
Arizona	1	2	2
Utah	....	....	22
Nevada	....	....	1
Pacific States			
Washington	....	....	5
Oregon	....	1	5
California	14	30	101
Territories and Possessions			
Alaska	....	....	....
Hawaii	1	1	....
Puerto Rico	2	2	3
Total	85	216	766

Awards for Study in Statistics.—Awards for study in statistics by persons whose primary field is not statistics but one of the physical, biological, or social sciences to which statistics can be applied are offered by the department of statistics of the University of Chicago. The awards range from $3,600 to $5,000 on the basis of an 11-month residence. The closing date for application for the academic year 1958-1959 is Feb. 15, 1958. Information may be obtained from the Department of Statistics, Eckhart Hall, University of Chicago, Chicago 37, Ill.

Meeting on Arteriosclerosis in Chicago.—The 11th annual meeting of the American Society for the Study of Arteriosclerosis will be held Nov. 2-4 at the Hotel Knickerbrocker, Chicago. There will be 62 papers presented in six sessions. The presidential address will be given the afternoon of Nov. 3 by Dr. C. F. Wilkinson Jr., New York City. The first annual G. Lyman Duff Lecture will be presented at a luncheon Oct. 3 by Dr. William Boyd, Toronto. For information write the American Society for the Study of Arteriosclerosis, P. O. Box 228, Dover, Delaware.

LATIN AMERICAN

Endocrinology Congress in Buenos Aires.—The fourth Pan American Congress on Endocrinology organized by the Argentine Society of Endocrinology and Metabolism will be held Nov. 3-9 in Buenos Aires, Argentina, under the presidency of Prof. Bernardo A. Houssay. Congress headquarters will be the Facultad de Ciencias Medicas. The scientific sessions will include lectures and scientific presentations by specially invited guest speakers. Registration fee is $15 for active members or $10 for adherent members. Scientific exhibits are planned and a program of entertainment has been arranged. For information write the Fourth Pan American Congress of Endocrinology, Tesorero, Asociacion Medical Argentina, Santa Fe 1171, Buenos Aires, Argentina.

EXAMINATIONS AND LICENSURE

MEDICAL SPECIALTY BOARDS

American Board of Anesthesiology: *Oral.* Washington, Oct. 28-Nov. 1. Various locations in the United States and Canada, July 18. Final date for filing application is Jan. 18. Sec., Dr. Curtiss B. Hickcox, 80 Seymour St., Hartford 15.

American Board of Dermatology: *Oral.* Baltimore, Oct. 11-13. Final date for filing application was April 1. Sec., Dr. Beatrice Maher Kesten, One Haven Ave., New York 32.

American Board of Internal Medicine: *Written.* Oct. 21. *Oral.* Los Angeles, Sept. 11-14. Final date for filing applications was Feb. 1. Exec. Sec., Dr. W. A. Werrell, 1 West Main St., Madison 3, Wis.

American Board of Neurological Surgery: Examination given twice annually, in the spring and fall. In order to be eligible a candidate must have his application filed at least six months before the examination time. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, St. Louis 10.

American Board of Obstetrics and Gynecology. Various locations in the United States and Canada. *Part I.* Jan. 2. *Part II.* Chicago, May 7-17. Final date for filing application is September 1. Sec., Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Oral.* Chicago, Oct. 7-11. *Written.* January 1958. Final date for filing application was July 1. Sec., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland 9, Maine.

American Board of Orthopaedic Surgery: *Part I.* April 3-4, Rochester, Minnesota, Denver, Colorado, Washington, D. C. Final date for filing application is Nov. 30. *Part II.* New York City, Jan. 29-31, 1958. Sec., Dr. Sam W. Banks, 116 South Michigan Avenue, Chicago 3.

American Board of Otolaryngology: Chicago, Oct. 7-11. Final date for filing application was in April. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: *Oral and Written. Pathologic Anatomy and Clinical Pathology.* New Orleans, Sept. 26-28. Final date for filing application is August 15. Sec., Dr. Edward B. Smith, Indiana University Medical Center, Indianapolis 7.

American Board of Pediatrics: *Oral.* Chicago, Oct. 11-13. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: *Oral and Written Examination.* San Francisco, Oct. 31-Nov. 2. Final date for filing case reports was July 1. Corresponding Sec., Miss Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8.

American Board of Preventive Medicine: *In Public Health. Oral and Written.* Cleveland, Nov. 7-9. Sec., Dr. Thomas F. Whayne, 3438 Walnut St., Philadelphia.

American Board of Proctology: *Oral and Written. Parts I and II.* September. Sec., Dr. Stuart T. Ross, 520 Franklin Ave., Garden City, N. Y.

American Board of Psychiatry and Neurology: New York, Dec. 16-17. San Francisco, March 17-18. Sec., Dr. David A. Boyd, Jr., 102-110 Second Ave., S. W., Rochester Minn.

American Board of Radiology: Washington, Sept. 23-28. Final date for filing application was June 1. Chicago, May 20-24. Final date for filing application is Jan. 1, 1958. Sec., Dr. H. Dabney Kerr, Kahler Hotel Bldg., Rochester, Minn.

American Board of Surgery: *Part II.* Buffalo, Sept. 23-24; New Haven, Oct. 21-23; Indianapolis, Nov. 18-19; Cincinnati, Dec. 16-17; New Orleans, Jan. 13-14; Durham, N. Car., Feb. 10-11; Baltimore, March 10-11; Chicago, May 12-13; Los Angeles, June 16-17 and Portland, Oregon, June 20-21. Sec., Dr. John B. Flick, 22' So. 15th St., Philadelphia 2.

American Board of Urology: *Written examination.* Various cities throughout the country. *Pathology and Oral Clinical.* February 1958. Location not decided. Exec. Secretary, Mrs. Ruby L. Griggs, 30 Westwood Road, Minneapolis 16.

Board of Thoracic Surgery: *Written.* Various centers throughout the country, Sept. 6, and the closing date for registration was July 1, 1957. Sec., Dr. William H. Tuttle, 1151 Taylor Ave., Detroit 2.

GOVERNMENT SERVICES

AIR FORCE

Consultants Visit Medical Installations.—Five national consultants to the surgeon general recently visited Air Force medical installations in Europe, Alaska, and the Far East. In line with the surgeon general's policy, they rendered services on problem cases in their specialties and conducted lectures and teaching sessions.

Dr. Elmer Hess visited installations in England, France, Germany, Greece, Turkey, Saudi Arabia, and Tripoli. Dr. Hess, a past-president of the American Medical Association, has been appointed chairman of the Health Resources Advisory Committee, Office of Defense Mobilization, and chairman of the National Advisory Committee, Selective Service System.

Dr. Arthur Grollman, chairman, department of experimental medicine, Southwestern Medical School, University of Texas, and Dr. James H. Allen, chairman of the department of ophthalmology, University of Tulane School of Medicine, visited installations in Japan, Korea, Okinawa, Hawaii, and the Philippine Islands.

Dr. Clair M. Kos, professor of otolaryngology, Iowa College of Medicine, State University of Iowa, and Dr. Robert J. Coffey, professor of surgery, Georgetown University School of Medicine, visited installations in Alaska.

Awards.—Major Gen. William H. Powell Jr., former deputy surgeon general of the U. S. Air Force, and now senior medical officer at Supreme Headquarters Allied Powers, Europe, has been awarded a Legion of Merit for his "significant efforts, as military leader and physician . . . in raising the United States Air Force Medical Service to an unprecedented level of professional competence . . . with its resultant contribution to the operational capability of the Air Force."——Major Gen. Olin F. McIlnay, deputy surgeon general of the U. S. Air Force has received the First Oak Leaf Cluster to the Legion of Merit. General McIlnay was cited for exceptionally meritorious conduct in the performance of outstanding service while serving as director of plans and hospitalization in the office of the surgeon general, U. S. Air Force, from June, 1952, to June, 1957. He modernized the budget and fiscal policies of the plans and hospitalization division, and through improving logistical planning for both mobilization and daily operations, contributed materially to the safety of the nation.

Personal.—Lieut. Col. George R. Steinkamp has been appointed head of the department of space medicine at the Air Force School of Aviation Medicine, Randolph Air Force Base, Texas, succeeding Dr. Hubertus Strughold, who founded the department in 1949. Dr. Strughold has been appointed advisor for research to Major Gen. Otis O. Benson Jr., commandant of the school at Randolph Air Force Base.

NAVY

Foreign Officers Attend U. S. Naval School.—Thirty foreign naval medical officers, representing NATO and SEATO nations, are assigned to postgraduate training, of two months' duration, at the Naval Medical School, Bethesda, Md., commencing Sept. 16. This training is under U. S. Navy sponsorship in accordance with the Mutual Security Act of 1954, under the provisions of the Military Assistance Program.

VETERANS ADMINISTRATION

Personal.—Dr. Albert L. Olsen, director, professional services, VA Hospital, Battle Creek, Mich., will be transferred as manager of the Knoxville, Iowa, VA Hospital, to succeed the late James R. Jack.

Dr. Henry L. Vogl, director, professional services, VA Center, Wood, Wis., will be transferred as manager of the VA Hospital in Minneapolis, replacing Dr. John A. Seaberg, who retired recently.

The hospital at Knoxville is a 1,540-bed neuropsychiatric hospital, and the Minneapolis institution is a 973-bed general medicine and surgery hospital.

Dr. Thomas L. Auth, chief, neurology service, VA Hospital, Washington, D. C., has been appointed chief of the neurology division at the VA Central Office in Washington, succeeding Dr. Benedict Nagler, who left the Veterans Administration Sept. 8 to become superintendent of the Lynchburg Training School and Hospital at Colony, Va. Dr. Auth is certified in neurology by the American Board of Psychiatry and Neurology and is on the teaching staff of Georgetown University School of Medicine. ——Dr. Benjamin F. Jackson, manager, VA Hospital, Tomah, Wis., will be transferred as manager of the VA Hospital at Bedford, Mass. Dr. Thomas E. Dredge, director, professional services, VA Hospital, St. Cloud, Minn., will succeed Dr. Jackson as manager of the Tomah hospital. The position of manager at the Bedford hospital was vacant because of retirement of Dr. Winthrop Adams, May 31, 1957. The Bedford and Tomah hospitals serve veterans with predominantly neuropsychiatric disorders.

Dr. Chamberlain Heads Atomic Program.—Dr. W. Edward Chamberlain, professor emeritus of radiology, Temple University Medical School, and president of the American Roentgen Ray Society, will head the Veterans Administration atomic medicine program in Washington, D. C., the VA announced Sept. 16. He will serve as special assistant for atomic medicine to the VA Chief Medical Director, Dr. William S. Middleton, and as associate director of the VA research service.

Dr. Chamberlain was director of the Temple University Hospital, department of radiology, and professor of radiology at Temple University Medical School, Philadelphia, from 1930 to February, 1957. He was head of the department of radiology at Stanford University Hospital from 1920 to 1930, professor of medicine in charge of radiology at the Stanford University Medical School from 1926 to 1930, and in private practice as a radiologist in San Francisco from 1919 to 1930. From 1917 to 1919, he served in the Navy as a lieutenant (j. g.) at the Mare Island Naval Hospital and in Scotland.

Seminar on Tranquilizers.—On Sept. 18, at the Northport Veterans Hospital, a seminar on tranquilizing drugs was presented by the Suffolk County Medical Society in affiliation with the VA Hospital, Northport, Long Island, N. Y., and the Dean's Committe of the State University of New York, College of Medicine. The speakers were Dr. David M. Engelhardt, associate professor of psychiatry, State University of New York, College of Medicine, "Outpatient Treatment of Schizophrenics with Ataractics," Dr. Henry Brill, assistant commissioner, State of New York, Department of Mental Hygiene, Albany, N. Y., "Clinical Research with Ataractic Drugs," and Dr. Frank Berger, director of medical research, Wallace Laboratories, New Brunswick, N. J., "The Tranquilizers—A Critical Review."

PUBLIC HEALTH SERVICE

New Research Training Program.—The Public Health Service has announced a new program of financial support for advanced training of research scientists in the field of neurological and sensory disorders to be conducted by the National Institute of Neurological Diseases and Blindness. A previous program, under which about 75 scientists received advanced training during the last fiscal year, was concerned exclusively with clinical training. The new program is designed to encourage advanced training in either the clinical area or in such basic science areas as neurochemistry, neuropharmacology, neurophysiology, or neuroanatomy.

While individual awards under the program generally will be made for not less than nine months and for not more than one year, all awards are subject to renewal and may be continued for three years. Stipends are determined in accordance with the applicant's qualifications and training needs and may range from $5,500 to $14,800 a year.

Application forms may be obtained from the Chief, Extramural Programs Branch, National Institute of Neurological Diseases and Blindness, Bethesda 14, Md.

Applicants must be citizens of the United States and free of any physical or mental disability that would interfere with the proposed training. They must have completed either (1) the residency training requirements in a clinical specialty, or its equivalent, or (2) at least three years of pertinent postdoctoral training or research experience.

Special traineeships may be awarded for training at any institution in the United States or abroad qualified to give the particular training desired by the applicant. The trainee may begin training at any time within 10 months of the date of his award. During the period of training, the trainee will not be permitted to carry on the private practice of medicine, and he may engage only in such teaching, clinical, and research activities as are a prescribed part of his training program.

Neuropharmacology Research Center.—Dr. Joel J. Elkes, British pharmacologist, has been appointed to the staff of the National Institute of Mental Health, to head a newly organized clinical neuropharmacology research center at St. Elizabeths Hospital, Washington, D. C., which will be jointly operated by the institute and the hospital.

Dr. Elkes, former chairman, department of experimental psychiatry, University of Birmingham, England, has concentrated his research in chemistry and the pharmacology of the nervous system for the past six years. During this period he has also been scientific director of the Early Treatment Research Hospital in Birmingham. He received his education at St. Mary's Hospital Medical School of the University of London. He has been the Sir Halley Stewart Research Fellow in the department of pharmacology at the University of Birmingham. During the period between 1950 and 1951, on a Fulbright traveling grant, he traveled in the United States.

Dr. Elkes has been a member of the research committee of the Mental Health Research Fund of Great Britain, and also was the organizing secretary of the First International Neurochemical Symposium, held at Oxford in 1954.

Dr. MacLean Joins National Institute of Mental Health.—Dr. Paul D. MacLean, formerly associate professor of physiology, Yale University School of Medicine, has joined the staff of the National Institute of Mental Health, Bethesda, Md., as chief, section on limbic integration and behavior, basic research branch.

Over the last 10 years, Dr. MacLean's analysis of the neurophysiology of the phylogenetically old (limbic) cortex and its connections with other brain structures has led to the development of theories relating to emotional behavior. He has related these neurophysiological mechanisms to temporal lobe epilepsy and its associated unconscious movements. In his new position, Dr. MacLean will continue to investigate the role of the "old" cortex and its associated structures (limbic system) in emotional, visceral, and other forms of behavior.

DEATHS

Matas, Rudolph ✠ New Orleans, surgeon and first recipient of the Distinguished Service Medal of the American Medical Association in 1938, died in the Touro Infirmary Sept. 23, aged 97. Dr. Matas was born Sept. 12, 1860, at Bonnet Carre, La. His early education was acquired in Barcelona, Paris, Brownsville, Texas, and New Orleans. He graduated at the University of Louisiana Medical Department in New Orleans in 1880, and served an internship at Charity Hospital. In 1879 Dr. Matas accompanied the yellow fever commission of the National Board of Health to Havana, Cuba. He began the practice of medicine in New Orleans in 1880, became chief of the clinic of surgery and gynecology at his alma mater, later known as Tulane University of Louisiana, serving until 1886. From 1895 to 1927 he was professor of surgery at Tulane University. He is said to have introduced the first spinal anesthetic in this country at Charity Hospital. Dr. Matas was organizer of Base Hospital 24 (Tulane Unit) for service in France, 1916-1917. Dr. Matas was a past-president of the New Orleans Medical and Surgical Society, the Louisiana State Medical Society, the American Surgical Association, the Southern Surgical Society, American Association of Thoracic Surgeons, the American College of Surgeons, and the International Society of Surgery. He was a member of the founders group of the American Board of Surgery. He was decorated by the governments of Venezuela. Spain, France, and Cuba. Tulane dedicated its medical library to Dr. Matas in 1937. He was co-inventor of the Matas–Smythe pump for artificial respiration. Named after him are the Rudolph Matas Award in Vascular Surgery, and an annual lecture sponsored by the Nu Sigma Nu medical fraternity at Tulane. In 1903 he was a member of the House of Delegates of the American Medical Association, serving as chairman of the Section on Surgery and Anatomy in 1907, and as Vice-President in 1921 and again in 1932-1933. A prolific contributor to the medical literature, Dr. Matas' attainments also encompassed the arts of music, painting, and sculpture. He received honorary degrees from Washington University, the University of Alabama, Tulane University, the University of Pennsylvania, Princeton, and the National University of Guatemala.

Lowrey, Lawson Gentry, New York City; born in Centralia, Mo., Dec. 23, 1890; Harvard Medical School, Boston, 1915; served on the faculties of the University of Utah in Salt Lake City, University of Missouri in Columbia, Harvard in Boston and Columbia University in New York City; lectured on psychiatry at the State University of Iowa in Iowa City, Southern Methodist University, Dallas, Texas, Smith College, Northampton, Mass., Hunter College in New York City, University of Minnesota, Minneapolis, and Western Reserve University School of Applied Social Sciences, Cleveland; in 1927 left Cleveland and came to New York, where he directed the new Institute of Child Guidance; served as psychiatrist in this area for several hospitals, the board of education and the Traveler's Aid Society; pathologist at the Danvers (Mass.) State Hospital from 1914 to 1917, when he became chief medical officer of the Boston Psychopathic Hospital, serving until 1920; served as assistant director of the Iowa State Psychopathic Hospital in Iowa City, consultant in psychiatry at the Grasslands Hospital in Valhalla, N. Y., and for many years attending psychiatrist for the Vanderbilt Clinic; specialist certified by the American Board of Psychiatry and Neurology; member of the Medical Society of the State of New York, American Psychiatric Association, and the American Psychopathological Association; past-president of the American Orthopsychiatric Association; served as a member of the executive committee of international conference on mental health; for many years editor of the *American Journal of Orthopsychiatry;* author of "Psychiatry for Social Workers" and others; served as associate editor of the *American Journal of Psychiatry;* died in the Knickerbocker Hospital Aug. 16, aged 66.

Lillie, Harold Irving ✠ Rochester, Minn.; born in Grand Haven, Mich., May 6, 1888; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1912; interned at the University of Michigan Hospital in Ann Arbor; an instructor in otolaryngology at his alma mater from 1913 to 1915 when he moved to Chicago, where he served as an instructor in otolaryngology at Rush Medical College in 1916-1917; in April, 1917, came to the Mayo Clinic, where on July 1, 1917, the section on otolaryngology and rhinology was established and he became the first head of the new unit; held that post until he became a senior consultant on Oct. 1, 1951; retired from the Mayo Clinic July 1, 1953; was professor of otolarygology and rhinology in the Mayo Foundation, Graduate School, University of Minnesota, where he held the title of emeritus professor of otolaryngology; president of the American Laryngological, Rhinological, and Otological Society in 1939 and of the American Laryngological Society in 1945-1946; fellow of the American Col-

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✠ Indicates Member of the American Medical Association.

lege of Surgeons and of the International College of Surgeons; member of the Southern Minnesota Medical Association, Minnesota Academy of Ophthalmology and Otolaryngology, American Academy of Ophthalmology and Otolaryngology, American Otological Society, Alumni Association of the Mayo Foundation, Alpha Omega Alpha, Sigma Xi, and the Phi Beta Pi; life member of the University of Michigan Union; specialist certified by the American Board of Otolaryngology; died Aug. 27, aged 69, of emphysema.

Dieckmann, William Joseph ⊕ Chicago; born in Belleville, Ill., Oct. 20, 1897; Washington University School of Medicine, St. Louis, 1922; joined the faculty of his alma mater as instructor in the department of obstetrics in 1924, subsequently becoming assistant professor of obstetrics and associate professor of obstetrics and gynecology; while in St. Louis served on the staffs of the Barnes Hospital from 1924 to 1931 and St. Louis Maternity Hospital from 1927 to 1931 when he became associate professor of obstetrics and gynecology at the University of Chicago, The School of Medicine; in 1942 became Mary Campau Ryerson professor of obstetrics and gynecology at the University, and from October, 1942, until January, 1954, was chairman of the department and chief of the staff at the Chicago Lying-In Hospital; specialist certified by the American Board of Obstetrics and Gynecology; past-president and vice-president of the Chicago Gynecological Society; member of the American Association of Obstetricians and Gynecologists, American Gynecological Society, Central Society for Clinical Research, Society for Experimental Medicine and Biology, and the Endocrine Society; attending gynecologist at the Albert Merritt Billings Hospital; editor of the *American Journal of Obstetrics and Gynecology;* recently completed the third revision of his book "The Toxemias of Pregnancy"; died Aug. 15, aged 59, of myocardial infarction and arteriosclerotic cardiovascular disease.

Ellis, Edward Forrest ⊕ Fayetteville, Ark.; born Aug. 18, 1863; Missouri Medical College, St. Louis, 1885; member of the House of Delegates of the American Medical Association in 1930-1931; past-president of the Washington County Medical Society, Arkansas State Medical Society, Frisco Medical Association, and the Tenth Councilor District Medical Society; member of the American Association of Railway Surgeons; fellow of the American College of Surgeons and the International College of Surgeons; a member of the state board of medical examiners during two gubernatorial administrations; chief of staff of the City Hospital, where he was a staff member since the founding in 1912; for many years member of the school board; a charter member of the board of directors of the First National Bank; awarded an honorary LL.D. degree from the University of Arkansas in 1934; the Ellis Room in the library of the University of Arkansas School of Medicine in Little Rock houses a professional library of more than 1,100 books presented by Dr. Ellis; the Washington County Historical Society presented him with a "Distinguished Citizen" citation on his 90th birthday; died Aug. 7, aged 93, of heart block.

Osborn, John Ernest ⊕ Rochester, Minn.; born in Wolcott, N. Y., Aug. 11, 1918; University of Buffalo School of Medicine, 1943; interned at the Rochester (N. Y.) General Hospital; certified by the National Board of Medical Examiners; specialist certified by the American Board of Anesthesiology; president of the Minnesota Society of Anesthesiologists; member of the American Society of Anesthesiologists, International Anesthesia Research Society, Alumni Association of the Mayo Foundation, Alpha Chi Sigma, and Nu Sigma Nu; fellow of the American College of Anesthesiologists and of the International College of Anesthetists; an honorary member of the Cuban Society of Anesthesiologists; came to Rochester in September 1944 as a fellow in anesthesiology of the Mayo Foundation; in the medical corps of the Army of the United States from 1946 to 1948 and returned to the Mayo Foundation to resume his fellowship; in 1956 appointed an instructor in anesthesiology in the Mayo Foundation, Graduate School, University of Minnesota; consultant in anesthesiology at the Mayo Clinic since 1949; on the staff of St. Mary's Hospital, where he died July 30, aged 39, of cancer.

Biro, Louis P., ⊕ Los Angeles; born in Budapest, Hungary Nov. 5, 1890, University of Pennsylvania School of Medicine, Philadelphia, 1920; specialist certified by the American Board of Physical Medicine and Rehabilitation; member of the American Society of Physical Medicine and Rehabilitation; formerly instructor of physical medicine at the New York Polyclinic Medical School and Hospital and on the staff of the Goldwater Memorial Hospital in New York City; served as lecturer of physical medicine at the University of Southern California School of Medicine; on the staffs of the Santa Monica (Calif.) Hospital and the California Hospital, where he died July 23, aged 66, of myocardial infarction.

Wedemeyer, Marlin Richard ⊕ Columbus, Ohio; born in Gallipolis, Ohio, June 7, 1908; Ohio State University College of Medicine, Columbus, 1933; member of the American Psychiatric Association; at one time practiced in Oak Hill and served as vice-president of the Jackson County Medical Society; veteran of World War II; formerly director of counseling and diagnostic clinic at the Ohio Penitentiary; in 1951 was named director of the Toledo Mental Hygiene Center, where he remained until his appointment as superintendent of the Columbus State Hospital, serving until his death at the University Hospital July 30, aged 49, of cardiovascular arteriosclerosis and pneumonia.

Smith, Roy Kenneth, Duarte, Calif.; born in 1885; University of Kansas School of Medicine, Kansas City, 1911; also an ordained minister; fellow of the American College of Physicians; member of the American Trudeau Society: specialist certified by the American Board of Internal Medicine; service member of the American Medical Association; served as a medical missionary in Korea; formerly resident physician at the State Sanatorium for Tuberculosis in Norton, Kan., and chief of the tuberculosis service of the Veterans Administration Hospital in Excelsior Springs, Mo.; died in Collis P. and Howard Huntington Memorial Hospital in Pasadena, July 31, aged 72.

Olds, William Henry ⊕ Los Angeles; born in Sprague, Wash., in 1886; Rush Medical College, Chicago, 1912; emeritus professor of surgery at the College of Medical Evangelists; member of the founders group of the American Board of Surgery; fellow of the International College of Surgeons and the American College of Surgeons; on the consulting staffs of the Orthopedic Hospital and the Santa Monica (Calif.) Hospital; associated with the Los Angeles County Hospital; served as chief of the surgical staff, California Hospital, where he was a member of the executive medical board, and where he died July 31, aged 70, of coronary disease.

Ball, Peter ⊕ Baltimore; born in Berlin, Germany, July 6, 1923; Columbia University College of Physicians and Surgeons, New York City, 1950; certified by the National Board of Medical Examiners; interned at the Bellevue Hospital in New York City, where he served a residency; formerly a resident at the Presbyterian Hospital, New York City, and the U. S. Public Health Service Hospital; at one time associated with the U. S. Public Health Service Reserve and the Indian Service; died in the U. S. Public Health Service Hospital, July 7, aged 34.

Smith, Scott Lord ⊕ Poughkeepsie, N. Y.; born in 1878; Columbia University College of Physicians and Surgeons, New York City, 1906; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the House of Delegates of the American Medical Association from 1945 to 1951; served as second vice-president of the Medical Society of the State of New York; past-president of the Dutchess County Medical Society; served as trustee and president of the Vassar Brothers Hospital, where he died July 30, aged 78, of cerebral hemorrhage.

Lang, Valorus Frederick ⊕ Milwaukee; Northwestern University Medical School, Chicago, 1930; assistant clinical professor of occupational and environmental medicine at Marquette University School of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the board of directors of the Central Agency for Chronically Ill; on the staffs of the Milwaukee Hospital and Columbia Hospital, where he died Aug. 2, aged 51, of arteriosclerotic heart disease.

Turner, Ewing Lee ⊕ Los Angeles; Rush Medical College, Chicago, 1934; assistant clinical professor of surgery at University of California School of Medicine; fellow of the American College of Surgeons; specialist certified by the American Board of Surgery; veteran of World War II; trustee and past-president of the Los Angeles County Medical Association; a member of the staff at Good Samaritan Hospital; surgeon for the Union Pacific Railroad; died in San Diego July 24, aged 51, of myocardial infarction.

Risser, Arthur Strohm, Blackwell, Okla.; University Medical College of Kansas City, Mo., 1905; an associate member of the American Medical Association, serving as a member of its House of Delegates from 1941 to 1944; past-president of the Oklahoma State Medical Association; fellow of the American College of Surgeons; associated with the Blackwell General Hospital, where he served as president of the medical staff and where he died July 17, aged 80.

Stormont, Riley McMillan ⊕ Webb City, Mo.; born Dec. 2, 1874; Kentucky School of Medicine, Louisville, 1898; past-president of the Jasper County Medical Society; formerly county coroner; plant physician for the DuPont Powder Company for many years; local physician for the Frisco Railroad and Missouri Pacific Railroad; on the staffs of the Freeman Hospital and St. John's Hospital in Joplin and the McCune–Brooks Hospital in Carthage; died July 24, aged 82, of cerebral hemorrhage.

Werelius, Axel F. W. ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; fellow of the American College of Surgeons; in 1920 knighted by King Gustav V of Sweden for his medical work; co-founder and formerly chief of surgical staff of South Shore Hospital; member of the surgical staff, Illinois Central Hospital, where he died Aug. 8, aged 86, of arteriosclerosis and gangrene of the left leg.

Barringer, Paul Ernest, East Meadow, N. Y.; Minneapolis College of Physicians and Surgeons, 1907; died June 30, aged 72, of bronchopneumonia and carcinoma of the prostate.

Berry, Mary Ella Kirby, Jorhat, Assam, India; Temple University School of Medicine, Philadelphia, 1942; interned at Lancaster (Pa.) General certified by the National Board of Medical Examiners; medical missionary; died Aug. 2, aged 41, of Asian influenza and leukopenia.

Brown, Paul ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1909; died in the Maryland General Hospital May 25, aged 72.

Bryson, Roy Douglas ⊕ Callaway, Neb.; Lincoln Medical College of Cotner University, 1907; veteran of World War I; a member of the Chamber of Commerce and for many years served on the board of education; died in the Callaway Municipal Hospital July 19, aged 74, of uremia and coronary occlusion.

Bumstead, John Henry ⊕ New Haven, Conn.; Johns Hopkins University School of Medicine, Baltimore, 1923; associate clinical professor of medicine at Yale University School of Medicine; veteran of World Wars I and II; on the staff of the Grace-New Haven Community Hospital; died July 29, aged 60, of acute myocardial infarction.

Burke, Emilie Elizabeth Mundy ⊕ Havertown, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1923; member of the American Academy of General Practice; on the staffs of the Misericordia Hospital in Philadelphia and the Thomas M. Fitzgerald Mercy Hospital in Darby, where she died July 31, aged 60.

Buten, Edward J., Fort Thomas, Ky.; Eclectic Medical Institute, Cincinnati, 1907; died June 22, aged 75, of arteriosclerotic heart disease with decompensation.

Dodson, Hobart W., Pompano Beach, Fla.; Jefferson Medical College of Philadelphia, 1921; practiced in Nanticoke, Pa.; died July 28, aged 60.

Donath, Lawrence Herbert ⊕ Wauwatosa, Wis.; Marquette University School of Medicine, Milwaukee, 1933; veteran of World War II; served as health officer of Lake Geneva; on the staff of St. Mary's Hospital, Milwaukee, where he died July 23, aged 51, of carcinoma of the lung.

Douglass, Alvin E., DeQuincy, La.; Memphis (Tenn.) Hospital Medical College, 1909; formerly member of the town council; Ward six police juror; died in St. Patrick's Hospital, Lake Charles, July 24, aged 72.

Farthing, J. Watts ⊕ Wilmington, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1933; certified by the National Board of Medical Examiners; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; associated with the James Walker Memorial Hospital and the Community Hospital; died in Lexington, Ky.; July 27, aged 48, of emphysema and bronchial asthma.

Forrest, James Finley ⊕ Summit Hill, Pa.; Jefferson Medical College of Philadelphia, 1917; veteran of World War II; died June 24, aged 65, of amytrophic lateral sclerosis.

Hall, George Washington ⊕ Northport, Ala.; Birmingham Medical College, 1914; served overseas during World War I; died in Birmingham, July 27, aged 74.

Hall, James Roland ⊕ Kansas City, Mo.; College of Physicians and Surgeons, Medical Department of the Kansas City University, Kansas City, Kan., 1904; died July 24, aged 88, of cardiovascular renal disease.

Hand, Patrick James ⊕ Glenolden, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1935; member of the Industrial Medical Association; died in Avalon, N. J., July 23, aged 48, of coronary occlusion.

Harris, Marcus Lafayette ⊕ Newport, Ark.; University of Louisville (Ky.) Medical Department, 1910; member of the state board of medical examiners; past-president of the school board; associated with the Harris Hospital; died July 23, aged 75, of a heart attack.

Hart, Raymond Lochary, Kearney, Neb.; State University of Iowa College of Medicine, Iowa City, 1897; served on the city council; formerly president of the First National Bank in Amherst; past-president of the Nebraska State Medical Association and the Kearney Rotary Club; died July 31, aged 84, of a heart attack.

Hawkins, Andrew Peter, Waubay, S. D.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; an associate member of the American Medical Association; veteran of World War I; died in the Peabody Hospital in Webster June 28, aged 79, of pernicious anemia.

Heyerdale, Oscar C. ⊕ Rochester, Minn.; Northwestern University Medical School, Chicago, 1898; served on the staff of the Rochester State Hospital; died July 20, aged 85, of fracture-dislocation of cervical spine due to a fall.

Hitschmann, Edward E., Cambridge, Mass.; Medizinische Fakultät der Universität, Vienna, Austria, 1895; member of the American Psychoanalytic Association; joint author of "Frigidity in Women: Its Characteristics and Treatment"; died July 31, aged 86.

Hodgkins, Albert E., Stockton, Calif.; L. R. C. P., of London, and M. R. C. S., of England, 1898; during World War I served 18 months in the Royal Army Medical Corps; died July 10, aged 85, of erysipelas.

Houston, Donald McClure ⊕ Park Rapids, Minn.; University of Minnesota Medical School, Minneapolis, 1935; certified by the National Board of Medical Examiners; veteran of World War II; on the staff of St. Joseph's Hospital, where he died June 20, aged 49, of cerebral hemorrhage.

Huffman, Albert Dale ⊕ Acton, Ind.; Indiana University School of Medicine, Indianapolis, 1917; served as president of St. Joseph County Medical Society; veteran of World War I; died June 15, aged 73, of coronary occlusion.

Klein, Samuel Moses ⊕ Flushing, N. Y.; University and Bellevue Hospital Medical College, New York City, 1920; veteran of World Wars I and II; served on the staff of the Kew Gardens (N. Y.) Hospital; fellow of the American College of Surgeons; died July 23, aged 60, of coronary thrombosis.

Klock, Egbert Le Roy, Orwigsburg, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1905; member of the Medical Society of the State of Pennsylvania; served as deputy coroner and school physician; on the staffs of the Good Samaritan Hospital and the Pottsville Hospital in Pottsville where he died July 29, aged 76, of carcinoma of the prostate.

Kremser, Valentine Charles ⊕ Amery, Wis.; Marquette University School of Medicine, Milwaukee, 1934; member of the American Academy of General Practice; served as city health officer; on the staff of the Apple River Memorial Hospital, where he died July 12, aged 49, of a heart attack.

Larner, Arthur Leo ⊕ Burlington, Vt.; University of Vermont College of Medicine, Burlington, 1904; served on the faculty of his alma mater; veteran of World War I; during World War II received the medal certificate of merit for volunteer work in Selective Service; on the staffs of the Mary Fletcher Hospital and the Bishop De Goesbriand Hospital, where he died July 24, aged 75, of a cerebral vascular accident.

Largay, Arthur Owen ⊕ Bayonne, N. J.; Georgetown University School of Medicine, Washington, D. C., 1917; veteran of World War I; served as school physician; member of the staffs of the Berthold S. Pollak Hospital for Chest Diseases and the Greenville Hospital in Jersey City and the Bayonne Hospital; died Aug. 2, aged 66, of carcinoma of the recto-sigmoid.

Lerner, Leiber Wolfe ⊕ Miami, Fla.; McGill University Faculty of Medicine, Montreal, Quebec, Canada, 1919; fellow of the American College of Surgeons; on the courtesy staffs of Victoria Hospital and the Mercy Hospital, where he died July 4, aged 59, of myocardial infarction.

McCooey, Daniel F., Dover, N. H.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1935; certified by the National Board of Medical Examiners; veteran of World War II; on the staff of the Wentworth–Dover City Hospital; died July 28, aged 51, of nephritis.

McHale, Joseph John, Washington, D. C.; Georgetown University School of Medicine, Washington, 1924; veteran of World War I; served on the staffs of the Georgetown and District of Columbia General hospitals, and Columbia Hospital for Women and Lying-In Asylum; died Aug. 3, aged 58, of coronary thrombosis.

Mason, Mary Taylor, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1915; died in the Germantown Dispensary and Hospital Aug. 13, aged 86, of bronchopneumonia, cardiac failure, and fracture of the hip.

Micklethwait, Oscar Richard ⊕ Portsmouth, Ohio; Medical College of Ohio, Cincinnati, 1906; on the staffs of the Portsmouth General Hospital and the Mercy Hospital, where he died July 31, aged 75, of acute myocardial infarction.

Miller, H. Edward ⊕ St. Louis; Washington University School of Medicine, St. Louis, 1902; specialist certified by the American Board of Otolaryngology; member of the American Laryngological, Rhinological and Otological Society; served on the faculty of his alma mater; consulting otolaryngologist at Lutheran Hospital; died in the Evangelical Deaconess Hospital Aug. 3, aged 79.

Moras, Edmond Raymond, Libertyville, Ill.; Harvard Medical School, Boston, 1888; College of Physicians and Surgeons of Chicago, 1889; for many years practiced in Highland Park; died in St. Therese Hospital, Waukegan, Aug. 3, aged 92.

Morris, Isaac Cahal, Bull Shoals, Ark.; Memphis (Tenn.) Hospital Medical College, 1906; died in Fayetteville July 25, aged 78, of carcinoma of the ampulla of vater.

Moyer, Rita Slater ⊕ Lockport, N. Y.; University of Buffalo School of Medicine, 1935; formerly school physician; city health officer; on the staff of the Lockport Memorial Hospital; died in the Buffalo (N. Y.) General Hospital June 19, aged 43, of hepatitis.

Pfister, Faris Fred ⊕ Webster, S. D.; University of Cincinnati College of Medicine, 1924; member of the American Academy of General Practice; president of the state board of medical examiners; served as vice-president of the South Dakota State Medical Association; for many years member of the school board, of which he was past-president; on the staff of the Peabody Memorial Hospital; died July 30, aged 55, of hypertension.

Price, Charles Wesley, Daytona Beach, Fla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1915; served on the staff of the Essex County Overbrook Hospital in Cedar Grove, N. J. and the Central State Hospital in Nashville, Tenn.; died Aug. 1, aged 71, of arteriosclerotic heart disease.

Raibourn, Richard Lorenzo, Princeton, Ind.; Dunham Medical College, Chicago, 1902; formerly on the staff of the Veterans Administration Hospital in Hot Springs, S. D.; died in the Gibson General Hospital July 7, aged 79, of virus pneumonia.

Reiff, Melville Newton ⊕ Washington C. H., Ohio; Western Reserve University School of Medicine, Cleveland, 1931; coroner of Fayette County; on the staff of the Fayette County Memorial Hospital, where he died July 30, aged 52, of coronary disease followed by pneumonia.

Reiss, Alexander ⊕ Monroe, N. Y.; Fordham University School of Medicine, New York City, 1919; served on the staffs of the Cornwall (N. Y.) Hospital and the Goshen (N. Y.) Hospital; died July 5, aged 65, of coronary thrombosis.

Richardson, David Phillip, Union, Okla.; Louisville (Ky.) Medical College, 1894; an associate member of the American Medical Association; also a druggist; served as postmaster; on the staff of the Wesley Hospital; died July 13. aged 88, of heart disease.

Ritchie, Douglas William ⊕ Temple City, Calif.; University of Oregon Medical School, Portland, 1926; veteran of World Wars I and II; interned at the Los Angeles County General Hospital, where he was assistant medical director; for many years medical director of the Rancho Los Amigos Hospital in Hondo; died July 26, aged 62, of coronary arteriosclerosis.

Robb, Winifred Arene Yelton ⊕ Newton, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; past-president of the Jasper County Medical Society; died July 24, aged 85.

Romano, Anthony Mario, Tenafly, N. J.; Georgetown University School of Medicine, Washington, D. C., 1933; member of the Medical Society of New Jersey and the American Society of Anesthesiologists; died Aug. 1, aged 48, of pulmonary edema.

Rupin, Anton, Phoenix, Ariz.; Missouri School of Midwifery and Diseases of Women and Children, St. Louis, 1890; practiced in Topeka, Kan.; died July 17, aged 90.

Russell, Murch, Sheridan, Ore.; Ohio Medical University, Columbus, 1905; served on the staff of the McMinnville (Ore.) Hospital; died in Portland July 27, aged 76.

Sabia, Daniel Joseph ⊕ Stamford, Conn.; Marquette University School of Medicine, Milwaukee, 1937; member of the American Academy of General Practice; veteran of World War II; on the staff of the Stamford Hospital, where he died Aug. 6, aged 47, of hypernephroma with metastases.

Santoro, Anthony ⊕ Chicago; Loyola University School of Medicine, Chicago, 1930; member of the American Academy of General Practice and the Industrial Medical Association; served during World War II; chief surgeon for the Chicago Fire Patrol; on the executive staff, West Suburban Hospital in Oak Park, Ill.; died Aug. 28, aged 58, of coronary thrombosis.

Sarkis, Eleazer Der, Philadelphia; Medico-Chirurgical College of Philadelphia, 1902; an associate member of the American Medical Association; served as Iranian medical missionary; for many years on the staff of the Presbyterian Hospital, where he died Aug. 16, aged 79.

Saunders, Edward Watts ⊕ New York City; Washington University School of Medicine, St. Louis, 1924; on the staffs of the Presbyterian and Roosevelt hospitals; died in Edgartown, Mass., Aug. 3, aged 58, of cerebral hemorrhage.

Shafer, Frank Myron, Carthage, Mo.; University Medical College of Kansas City, 1901; served as chief of the medical service at the Veterans Administration Hospital in Fayetteville, Ark., where he died July 16, aged 80, of a cerebrovascular accident with hemiplegia.

Sherman, Elvie Clyde, Cardington, Ohio; Starling Medical College, Columbus, 1896; died July 27, aged 86, of a heart attack.

Shore, John Paul Jones ⊕ Sailor Springs, Ill.; Barnes Medical College, St. Louis, 1903; on the staff of the Clay County Hospital in Flora; died July 31, aged 78, of uremia.

Sikes, Gibson L., Raleigh, N. C.; University College of Medicine, Richmond, 1900; member of the Medical Society of the State of North Carolina; died in the Rex Hospital July 25, aged 86.

Simons, Samuel Shirk ⊕ Marietta, Pa.; Jefferson Medical College of Philadelphia, 1923; fellow of the American College of Physicians; served on the faculty of his alma mater; associated with the Lancaster (Pa.) General Hospital; died Aug. 2, aged 67, of coronary occlusion and carcinoma of the stomach.

Smith, Lewis Albert ⊕ Mansfield, Ohio; Ohio Medical University, Columbus, 1897; on the staff of the Mansfield General Hospital; died in St. Anthony Hospital, Columbus, July 20, aged 83, of arteriosclerotic heart disease and chronic cystitis.

Spooner, Dostor Sterling, Pahokee, Fla.; Atlanta School of Medicine, 1909; died July 21, aged 76.

Stanton, Frank Everett Sr., Long Beach, Calif.; Rush Medical College, Chicago, 1910; on the staffs of the Long Beach Community Hospital and the Seaside Memorial Hospital, where he died July 29, aged 73, of coronary occlusion.

Stratford, Eldredge Wayne ⊕ Portland, Ore.; Harvard Medical School, Boston, 1931; fellow of the International College of Surgeons; veteran of World War II; on the staffs of the Physicians and Surgeons Hospital and the Thomas B. Wilcox Memorial Hospital; died July 25, aged 55, of carcinoma of the abdomen.

Sughrue, Dennis Francis, Boston; Harvard Medical School, Boston, 1898; veteran of the Spanish-American War; died in the Carney Hospital July 29, aged 92, of cerebral thrombosis.

Sullivan, James Aloysius, Jersey City, N. J.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1905; served as chief pediatrician at the Jersey City Medical Center, where he died July 26, aged 75, of cerebral thrombosis.

Swindle, Robert Norris ⊕ West Palm Beach, Fla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; member of the Illinois State Medical Society; at one time practiced in Chicago, where he was on the staff of the Roseland Community Hospital; died in the Grant Hospital, Columbus, Ohio, Aug. 17, aged 73, of carcinoma.

Swingle, Alvin Jacob ⊕ Benton Harbor, Mich.; Ohio State University College of Medicine, Columbus, 1938; fellow of the American College of Surgeons; veteran of World War II; on the staffs of St. Joseph-Benton Harbor Memorial Hospital in St. Joseph and the Mercy Hospital; died Aug. 1, aged 45, of a coronary attack.

Thompson, Albert Ely, Washington, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; an associate member of the American Medical Association; past-president and secretary of the Washington County Medical Society; veteran of World War I; on the staff of the Washington Hospital; fellow of the American College of Surgeons; died July 30, aged 83, of carcinoma of the colon.

Thompson, Penrose Hann ⊕ Merchantville, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1929; member of the American Academy of General Practice; past-president of the Medical Society of New Jersey; for many years on the staff of the West Jersey Hospital in Camden; died in the Memorial Hospital, Somers Point July 24, aged 53, of cerebral hemorrhage.

Van Allen, John Peter, San Antonio, Texas; Kansas City (Mo.) Medical College, 1899; died in the San Antonio State Hospital July 19, aged 80, of acute coronary occlusion.

van Allen, William Roy, Canandaigua, N. Y.; University of Tennessee College of Medicine, Memphis, 1935; member of the American Psychiatric Association; physician in charge, Brigham Hospital; served on the staff of the Florida State Hospital in Chattahoochee; formerly superintendent of the Kentucky State Hospital in Danville; died July 26, aged 57, of coronary disease.

Van Vleet, Mary Elizabeth ⊕ Milwaukee; Northwestern University Medical School, Chicago, 1949; certified by the National Board of Medical Examiners; associated with Milwaukee and Columbia hospitals; died July 18, aged 37.

Vonderbeck, John, Louisville, Ky.; University of Louisville Medical Department, 1911; member of the American Academy of General Practice; on the staff of St. Anthony Hospital, where he died July 21, aged 72, of arteriosclerotic heart disease.

Vosburg, Walter Hall, Dunkirk, N. Y.; Cleveland Medical College, Homeopathic, 1897; fellow of the American College of Surgeons; veteran of World War I; member of the city board of health and city council; on the staff of the Brooks Memorial Hospital, where he died Aug. 5, aged 82.

Wakeman, Charles Leonard, Hancock, N. Y.; Eclectic Medical College of the City of New York, 1896; an associate member of the American Medical Association; formerly practiced in Andes; veteran of World War I; served as president of the board and as superintendent of the Hancock Community Hospital; an honorary member of the board of directors of the Read Memorial Hospital, where he died July 4, aged 85, of chronic myocarditis.

White, Homer Evert ⊕ Naylor, Mo.; University of Louisville (Ky.) Medical Department, 1909; died July 6, aged 74, of coronary occlusion.

Whitelaw, Henry Neill, Corvallis, Ore.; Rush Medical College, Chicago, 1906; died July 19, aged 82, of cerebral hemorrhage.

Williams, Joseph Murray Jr. ⊕ Anthony, Kan.; Temple University School of Medicine, Philadelphia, 1950; served an internship and residency at the Temple University Hospital in Philadelphia; killed July 19, aged 32, when his station wagon overturned.

Workman, Irvin Samuel, Mount Vernon, Ohio; Western Reserve University Medical Department, Cleveland, 1903; died July 6, aged 87, of uremia.

Zimmerman, Fred, Brooklyn; St. Louis University School of Medicine, 1930; died July 19, aged 53, of coronary thrombosis.

FOREIGN LETTERS

BRAZIL

Duodenal Intubation After Cholecystectomy.—Patients who have had a cholecystectomy may be followed up by means of intravenous cholangiography or duodenal intubation. The roentgenmanometric study, by means of laparoscopic cholangiography or through Royer's transhepatic technique requires, in both cases, a previous laborious training. This explains the interest in the study of duodenal intubation as a simpler and more practical method of investigating the postoperative function of the biliary system. Dr. Djalma Vasconcellos (*Hospital, Rio de Janeiro,* 51:393, 1957) reported a study of 50 patients who had undergone cholecystectomy. Their ages varied between 17 and 67 years; 32 were between 21 and 40. The first 21 were examined before and after operation and the remaining 29 only after the cholecystectomy. After a flow of bile for 15 minutes, a 1% solution of procaine was instilled, and the bile was collected for 15 minutes. The duodenal intubations were performed 1, 6, and 12 months after the operation and in a few patients only after two years. The patients were divided into (1) those who were asymptomatic; (2) those who had hyposthenic dyspeptic symptoms or mild pain; and (3) those who had major symptoms and jaundice. The action of procaine was studied in 31 tests in the patients of the first group. In 27 tests the minute-volume of the bile flow was increased, in three it was decreased, and in one it remained unchanged. In the patients of the second group, 77.7% gave a history of hepatic colic before operation, 11.1% of them with jaundice. In the remaining 22.2%, the postoperative complaints were about the same as before operation. The action of procaine was studied in 17 patients of this second group, in 16 of whom the minute-volume was increased. All the 11 patients of the third group in whom the action of procaine was studied showed an increase in the minute-volume of the flow.

The author concluded that the value of duodenal intubation for the interpretation of the postcholecystectomy syndrome is relative, since the same type of hypertonia is found in a large proportion of asymptomatic patients. It is useful to perform duodenal intubation preoperatively on all patients about to undergo cholecystectomy, as the incidence of functional disturbances occurring preoperatively and postoperatively is about equal. The syndrome of hypertonia of the sphincter of the terminal portion of the common bile duct is frequently observed in patients after cholecystectomy with or without symptoms. In the author's series it was found in 45.4% of the asymptomatic patients—in 64.9% of those with hyposthenic dyspepsia, and in 86.6% of those with painful crises. No case of cholecystectomy syndrome related to sphincteral hypotonicity was observed by the author.

Breech Delivery.—Breech presentation offers the highest rate of difficulties and dangers for the mother, fetus, and obstetrician. Dr. L. R. Rodriguez (*Rev. gynec. obst.* 50:859, 1957) reported a series of 281 breech presentations in 8,768 deliveries (3.2%). Of the 281 mothers, 146 (51.9%) were primiparas, and their age distribution was as follows: 15 to 19 years, 16; 20 to 29 years, 145; 30 to 39 years, 111; and 40 years or over, 9. There were 42 premature deliveries. There were 30 multiple deliveries (10.6%); a high percentage of mothers of more than 30 years of age (42.7%); a low incidence of maternal deaths (0.3%); a high percentage of mothers needing cesarean section (17.8%), particularly those of more than 30 years (54%); a marked influence of fetus-pelvis disproportion (38%) as the main reason for cesarean section; a higher fetal mortality (56.7%) when the fetus weighed more than 2,500 Gm. (5.5 lb.) than when it weighed less; a high fetal mortality when the mother was over 30, particularly if multiparous (48.6%); and a higher percentage of fetal deaths in spontaneous delivery (81%).

Transfused Erythrocyte Survival.—Dr. Victorio Maspes (*Rev. Hosp. clin.* 12:208, 1957) reported experimental work which led to a modification of Ashby's method for the determination of the survival of transfused erythrocytes. The necessity of a method of differential serum agglutination that would be accurate and at the same time would not need too much time nor special serums and complicated equipment led the author to undertake this investigation. His theoretical aim was to devise a method as exact as those already described in the literature but, for the performance of which, it would not be necessary to use rabbit serums anti-M and anti-N nor hemolytic and lyophilized serums. He planned to use human serums anti-A and anti-B with high titers to reduce the number of residual erythrocytes. The final result was a modification of Ashby's method, for which the author used dilutions of the order of 0.02 ml. in 1.0 ml. of diluent made with larger volumes than those made with the hematimetric pipets. For the systems ABO and Rh, the serums

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The items in these letters are contributed by regular correspondents in the various foreign countries.

used for the differential agglutination were concentrated by freezing at between −10 C and −32 C with subsequent removal of the supernatant fluid when the serums were thawed. For the systems MN, a powerful phytoagglutinin (a 1:40 extract of seeds of Vicia graminea) was used with advantage for the count, since this extract is a solution in a saline medium and thus has a reduced viscosity. With the use of the Vicia extract, the author obtained results indistinguishable from those obtained with cryoconcentrated serums.

INDIA

Railway Concessions for Patients with Cancer.—Travel concessions granted to blind persons and tuberculous patients were extended to patients with cancer on similar terms starting in July. Patients with cancer traveling alone for admission to or discharge from a hospital need pay only 25% of the normal fare. The patient and an attendant are allowed to travel on payment of one full fare. To obtain this benefit, the patient must present a certificate from the hospital or institute concerned to the effect that the applicant is a bona fide cancer patient traveling for admission to or on discharge from a hospital.

Health Grants.—About $38,000 has been allocated to India by the executive board of the United Nations International Children's Emergency Fund for a program to improve, expand, and integrate the training of physicians in clinical and preventive pediatrics. Under the scheme, eight fellowships, each of one year's duration, would be available in the pediatrics department of the Madras Medical College. The board has also made an allocation of $131,000 for tuberculosis control, $16,500 for goiter control, $383,000 for preschool and school feeding programs, and $1,515,000 for maternal and child welfare services. These amounts are not given in cash to the government, but, when a particular scheme covered by the assistance program develops, supplies and equipment are made available in kind, while the amounts for fellowships and salaries are paid in cash to the institutions concerned.

Amebiasis in Children.—Amebic infection can occur at any age, although it is not as common in children as in adults. A. Bhattacharya and co-workers reported a series of 26 children (18 boys and 8 girls) with this infection (*Bull. Calcutta School Trop. Med.* 5:2, 1957). Their ages varied from 2½ to 10 years. The duration of intestinal complaints ranged from one to five years. The onset was sudden in 17 patients; 4 had diarrhea alternating with constipation. Other symptoms met with were emaciation, vague abdominal pain, and irregular fever associated with constipation. The liver was palpable in 16 patients. Barium enema examination showed a moth-eaten appearance of a segment of the colon, filling defects, and localized areas of radiolucency. Blood examination revealed anemia and leukocytosis in some patients and a high eosinophil count in others. The sedimentation rate was elevated in four patients. Entamoeba histolytica in the vegetative or the cyst form or both was seen on stool examination in all cases. Ulcers were seen on proctoscopy in eight patients, swabs from these areas being positive for E. histolytica trophozoites. These cases were not diagnosed correctly for some time and were either untreated or treated for bacillary dysentery. The possibility of amebiasis should therefore be considered in children with intestinal complaint and poor general health.

Comparison of Epinephrine, Corticotropin, and Cortisone.—H. G. Roy (*Indian M. Forum* 8:7 [July] 1957) studied the action of epinephrine hydrochloride, corticotropin, and cortisone acetate on the circulating eosinophil level, on the serum potassium level, and on the ratio of urinary uric acid to creatinine. These drugs produced a fall in the number of circulating eosinophils in normal persons. The count was usually cut in half by the fourth hour after the injection. This depression after injections of epinephrine was transient, corticotropin had a more sustained effect, and the most prolonged action was seen after injections of cortisone. Injections of these drugs caused lowering of the serum potassium level, but the action was not consistent in normal subjects, and the wide fluctuations seen in conditions of stress must be due to some other factor or factors influencing the potassium-ion concentration. The ratio of urinary uric acid to creatinine increased after the injection of all three drugs. This rise was sometimes preceded by an initial fall in the ratio after injections of epinephrine and corticotropin. It reached 100% or more in all subjects after corticotropin and cortisone injection but not after injection of epinephrine. Of the three drugs, cortisone produced the more lasting effect on the ratio, which was maintained at a high level for over three hours after injection. The author concluded that cortisone is the drug of choice for conditions of stress because its effect is more sustained than that of the other drugs. It also acts directly on the tissues and so does not stimulate the hypothalamic-pituitary-adrenocortical mechanism which is already hyperactive in conditions of stress.

Intrapleural Pressure.—N. R. Konar and co-workers (*J. Indian M. A.* 29:3 [Aug. 1] 1957) studied the changes in intrapleural pressure on the two sides of the chest during inspiration and expiration in normal subjects and in patients suffering from pleurisy with effusion, bronchial asthma, pulmonary emphysema, and cirrhosis of the liver with ascites.

The intrapleural pressure was recorded successively on both sides of the chest at the same sitting. The patients had no analgesics or hypnotics till the investigation was completed. There was significant difference of pressure in the two sides of the chest in normal subjects. The negative pressure was less on the left side than on the right, the difference being about 2 cm. of water. This was true both during inspiration and expiration. In patients with pleural effusion, the negative pressure was less on the affected side, and sometimes a positive pressure was observed. Shifting of the mediastinum to the opposite side caused by the effusion also reduced the negative pressure on the healthy side. During an attack of bronchial asthma, the negative pressure was greater than normal during inspiration and less than normal during expiration. These changes were due to bronchospasm which interfered with normal entry of air into the lungs during inspiration and deflation of the lungs during expiration. In emphysema, the negative pressure was less than normal on both sides during both the phases of respiration due to the diminished elasticity of the distended lungs. In ascites also, the negative pressure was less than normal on both sides during inspiration and expiration due to encroachment of the pleural space by the raised diaphragm.

Tropical Splenomegaly.—Saha and Chaudhari (*Bull. Calcutta School Trop. Med.* 5:2, 1957) reported a series of 60 patients with tropical splenomegaly in whom the liver was examined by means of a needle biopsy. These patients suffered from irregular fever, and clinical examination showed enlargement of spleen, usually associated with an enlarged liver and hemocytopenia. All of these patients had ascites, five had gastrointestinal hemorrhage, and four had jaundice. Liver biopsy showed normal findings in 14, and 20 had focal necrosis in the liver parenchyma with cellular infiltration and varying degrees of reticular condensation and hyperplasia with proliferation of fibroblasts; diffuse parenchymal degeneration was present in 9 and fatty degeneration in 7. Round cell infiltration in the portal tracts was seen in 41, and 3 had portal cirrhosis. Kupffer's cells were increased in number and size in all the patients. Accumulation of hemosiderin granules in the liver cells and Kupffer's cells was seen in 8 of 20 patients whose specimens were stained for iron pigment. Biopsy was repeated after splenectomy in 8; Kupffer's cells were hyperactive in all of these. One patient whose liver biopsy specimen had shown normal histological findings before operation showed the same postoperatively and was progressing well when last seen. Seven patients who had hepatic involvement before operation were influenced by operation as far as cirrhotic changes were concerned. Four patients who were treated with antimalarial drugs showed reduction in the size of the spleen, but the liver biopsy specimens showed no significant abnormality before or after this treatment. Two patients who did not respond to medical treatment showed progressive involvement of the liver.

Rauwolfia Serpentina and Gastric Acidity.—Rindani and Antia (*Ind. J. M. Sc.* 11:7 [July] 1957) studied the action of a reserpine-free extract of Rauwolfia serpentina on the free acid content of gastric juice under basal conditions and in response to insulin hypoglycemia. Extracts of R. serpentina from which the reserpine fraction has been removed prevent activation of adrenal cortex during stress in both rats and man without interfering with the action of corticotropin or cortisone in the body, while reserpine itself stimulates the adrenal cortex. It has been suggested by other authors that cortical hormones of the adrenal glands may cause the extravagal stimulation of gastric secretion observed under stress. Insulin hypoglycemia, however, causes gastric hypersecretion by acting on the vagus nerves, presumably by stimulating the hypothalamus. The authors, therefore, decided to study the action on gastric juice of an agent that would inhibit the activation of the adrenal cortex during stress without interfering with the action of corticotropin or cortisone. Samples of gastric contents for assessing basal acidity were collected from 15 subjects, after previous starvation and initial emptying of the stomach, and four further samples were collected after insulin injection in 10 of the subjects. This procedure was repeated after treating them all with a reserpine-free extract of R. serpentina for a day. Part of the drug was given by mouth and part by intramuscular injection. While the drug had no noticeable influence on the basal acidity, there was a significant inhibition of the higher acidity induced by insulin hypoglycemia.

Experimental Viper Venom Poisoning.—R. D. Ganatra and co-workers (*Ind. J. M. Sc.* 11:7 [July] 1957) stated that the immediate administration of an antivenin is the most useful therapy in patients with snake bite, but it also has its disadvantages. Antihistaminics, corticotropin, and cortisone have been used with antivenin or as the sole form of therapy as an experimental procedure in animals and even in some critical trials. The authors first used hydrocortisone as an adjunct to antivenin and then as the sole form of treatment for snake bite in mice. The dose of antivenin used in these experiments was smaller than that usually used, so that the effect of the supplementary therapy could more readily be evaluated. The LD_{50} for the venom was calculated. Later 2 LD_{50} of the venom and sufficient antivenin to neutralize 1 LD_{50} were injected when the mortality was found to be about 57%. Mortality was reduced to 17% by giving 0.1 mg. of hydrocortisone per gram of body weight alone or with antivenin, in spite of the fact that the dose of the venom used was 2 LD_{50}. The beneficial effect of hydrocortisone in poisoning by viper venom may be due to the predominantly hemolytic action of the venom.

Research in Chest Diseases.—A course of training for laboratory technicians was inaugurated in the Vallabhbhai Patel Chest Institute, Delhi, in July. This should make possible a fuller use of the institute's laboratory. Two experts from the United States are helping to organize this course. The main function of the institute is research in diseases of the chest and training of chest physicians. The institute has so far conducted investigations on the effect of antituberculosis drugs; the determination of circulation time in human beings and animals with use of radioactive isotopes; an inquiry into infectious hepatitis; and identification of certain nerve receptors in the heart, lungs, and stomach.

NEW ZEALAND

Asian Influenza.—The Influenza Advisory Committee announced that the department of health will continue to watch closely developments relating to Asian influenza. The committee, led by the director-general of health, is comprised of prominent practitioners and senior health officers. All available evidence indicates that the current epidemic is of a mild type and extremely prevalent, especially among children. It must be recognized, however, that in any influenza epidemic, no matter how mild, and regardless of the strain, a few deaths may occur. Recent reports from Australia suggested some new association of Micrococcus pyogenes var. aureus resulting in lung complications. The committee emphasizes, however, that such complications can and do occur in the absence of influenza. The deaths from lung complications that have occurred to date conform to this well-known pattern and in no way invalidate the view that the current influenza epidemic is one with a high morbidity and a low death rate. No deaths due to uncomplicated influenza have occurred. The symptoms of the disease are easily recognized. The disease has a rapid onset with headaches, dizziness, cough, and fever. The temperature falls in two or three days and sometimes rises again on the fourth or fifth day. Recovery occurs in about one week. Since there is no specific treatment for the disease, victims should stay in bed until their temperature has subsided. Bed rest is the essential feature of the treatment, and if the condition does not clear up in two days the family physician should be consulted. As long as influenza is epidemic in any particular locality, the young should avoid vigorous exercise and competitive sports should be interrupted.

In Auckland hospitals, 51 patients with pneumonia were admitted in four days (Aug. 23 to 27). Although the superintendent of the hospital board was not able to say definitely whether the Asian influenza virus was responsible for these cases, there was strong suspicion that this was the case. A special ward will be opened at Green Lane Hospital to receive patients suffering from complications of influenza, should the number increase. This would be manned by the permanent staff whose normal duties would be performed by a temporary staff. Three young children believed to have been suffering from Asian influenza died in Wellington. In a 15-month-old infant, death occurred within 12 hours. A 16-year-old boy who arrived with his schoolmates at a holiday camp suddenly became dyspneic. He was taken to a hospital where he died three hours later of pneumonia.

People who wish to obtain vaccine against Asian influenza can do so through their family physicians. Because the vaccine was made by a private firm in Wellington, it could not be supplied free of charge. Vaccine used for hospital staffs and others in the "special risk" group came to the health department from the Commonwealth Serum Laboratories in Australia, but there was not enough of this to supply even this limited demand. The press has accused the Influenza Advisory Committee of unwarranted complacency. In September the epidemic was sweeping through North Island centers and was expected to bring with it a serious loss in production. Some editorials have opposed the decision of the committee that there is no justification for general community inoculation against influenza in view of the mildness of the disease. The epidemic is having repercussions on the social life too. In Gisborne a singing contest was discontinued when the judges became ill. Because 8 of 76 boys in a holiday camp at Reikorangi, Waikane, were affected by influenza, it was decided to disperse the Wellington boys to their homes to avoid the possibility that the whole camp would be affected. The 40 or so boys from the South Pacific Islands who are in New Zealand under the direction of the Department of Island Territories will remain in camp, as they are attending boarding schools.

Influenza has seriously affected the physical fitness of the Fijian football team at present on a tour in New Zealand. Members of the Invercargill Borstall staff are playing the part of nurses to about 100 inmates of a total of 209 confined to bed with influenza. The epidemic first struck the institution one Sunday, and two days later the number of victims had grown to 100. In order not to alarm the citizens, the press has tended to minimize the state of the epidemic. In Dunedin its morbidity is now serious; the staffs of all city shops, hotels, and hospitals are almost depleted. At the Otago Medical School the work at the experimental animal headquarters is carried out by school children who volunteered to cope with the emergency. A druggist in Wairarapa reported a sharp rise in the sales of smelling salts, usually in very low demand. In Wellington people have bought out available supplies of ammoniated quinine believing it to be a sure cure. Perhaps, in Dunedin, the most popular cure is aspirin with lemon or hot whisky.

NORWAY

Courtesy to the Relatives of Dying Patients.—Dr. Karl Evang has issued an appeal in the organ of the Norwegian Medical Association to his colleagues in general and the staffs of hospitals in particular with regard to near relatives of patients whose deaths in the hospital are associated with painful circumstances aggravated by carelessness on the part of physicians or nurses. By virtue of his position, he has to deal with complaints of this kind. In certain cases, rare and exceptional though they are, physicians and nurses may leave the impression on the minds of the relatives that enough has not been done to save life or, at any rate, relieve suffering. Hospital physicians have been held to have been dilatory in their attendance during the last phases of the patient's illness and to have lacked consideration when speaking to his relatives after his death. A complainant may force his way to the hospital head who has hitherto been unable or unwilling to give him an audience. By now the complainant may have become more suspicious than ever, and the head is on the defensive, scenting trouble with claims for compensation. Deaths among the young and the middle-aged have now become so relatively rare that many people are tempted to assume that some blunder must be responsible when they do occur. There has also been a change in the attitude of the public to physicians whose authority is no longer what it was. Clear and detailed explanations are now required of them, and they must not talk down to people or put them off as incapable of understanding medical matters. Evang's advice to the heads of hospitals is to take up this subject with the staffs and to impress on them how to meet halfway the sorrowing relatives of the dying.

Dermatitis from Creaseless Fabrics.—A recent case of dermatitis due to clothing and treated at the skin department of the Rikshospital in Oslo has led to a systematic study of creaseless fabrics rendered such by treatment with formaldehyde or formalin. Traces of it are apt to linger in the material thus treated. On the assumption that formalin might be responsible for creaseless fabric dermatitis, the first step taken was to apply standard epicutaneous skin tests to 110 consecutive persons (66 men and 44 women) suffering from idiosyncratic eczema. Among them were 13 men and 11 women giving a reaction to formalin. These 24 patients were tested with one or another of the seven different creaseless fabrics available for testing. The fabrics were moistened with water, and the patient reactions were read 48 and 72 hours later. After 72 hours there was a definite reaction in four women and one man. Five men and five women who did not suffer from eczema were also tested in the same way with some creaseless fabric, but in none of these was any reaction provoked. Three of the four women reacting to some creaseless fabric had a history and clinical findings of "dress dermatitis." Dr. Oddvar Andrup, (*Tidsskrift for den norske lægeforening*, Aug. 15, 1957) draws attention to the rapid development of textiles treated with resins to confer certain properties on them and to the need for special marking of such textiles so that persons liable to formalin dermatitis may be forewarned.

Surgical Treatment of Lumbago-Sciatica.—Dr. K. Kristiansen (*Nordisk medicin*, Aug. 8, 1957) reported a series of 177 patients who had been operated on for lumbosacral herniation of the nucleus pulposus. This involved the fourth intervertebral disk in 104 cases. The cases were, on the whole, severe, and they included 27 in which the bladder or rectum was paretic. Myelography with a water-soluble iodine contrast medium was carried out in every case and with positive findings. The operation was performed with the patient in the knee-elbow position, and osteofixation of the spine was performed according to the Smith-Petersen technique after removal of the herniation. The patients were allowed out of bed on the day after the operation and discharged from hospital on the 14th to 16th postoperative day. There were no postoperative deaths, and the thrombosis-embolism rate was 15%. Though Kristiansen admitted that there was still disagreement throughout the world over the merits of spondylofixation as a supplement to removal of the herniation, he was so pleased with the results of the combined operation that he still adhered to it, having found that the herniation is but part of the trouble which is associated with osteochondrosis and changes in the intervertebral joints. His assistant, Dr. Nils Eie, undertook a follow-up examination of 113 of his patients with an observation period of one to six years after the operation. He found 110 to be fully fit for work and 101 entirely free from pain. Of the three patients who relapsed, two did so on heavy work after having been perfectly fit for work after the first operation. All three were operated on again, and two of them became free of pain.

Leukemia After Radiotherapy.—Recently the staff of the Aalesund City Hospital was struck by the frequency with which the patients admitted for leukemia gave a history of radiotherapy at some earlier date. To throw more light on this point, Voll and Tveit (*Nordisk medicin*, Aug. 1, 1957) searched the records of this hospital for the period 1950-1956 and found that 31 patients had been treated in it for leukemia. Among them were 10 who had previously been treated with radium or x-ray for various ailments and periods. Six of the 10 had received relatively large x-ray doses which had, however, been spread over several years. All 10 patients suffered from acute leukemia or chronic granulocytic leukemia—not one from chronic lymphocytic leukemia. Other observers have also noted the absence of cases of chronic lymphocytic leukemia in association with previous radiotherapy. If no causal relationship exists, one might expect all the different forms of leukemia to be represented now and then in association with radiotherapy.

UNITED KINGDOM

The Welfare State.—At the end of 1956, the Ministry of Pensions and National Insurance was paying nearly 840,000 war pensions, about 3,500,000 family allowances, 4,500,000 retirement pensions, 470,000 widows' benefits and guardians' allowances, and 140,000 industrial disablement pensions. Over 257 million dollars was paid in war pensions during the year, an increase of about 28 million dollars over the previous year. Of the 840,000 war pensions, 364,000 were for World War I and 476,000 for World War II. The total of 840,000 includes 601,000 disability pensions, 158,000 widows' pensions, and 80,000 pensions for parents, orphans, and other dependants. New claims for sickness benefit in 1956 totaled 7,750,000 at a cost of nearly 280 million dollars. It is estimated that 770,000 maternity benefits, 295,000 home confinement grants, and 164,000 maternity allowances were paid during the year, at a cost of 39 million dollars. The combined cost of these and other benefits paid by the ministry was at the rate of nearly 2.5 billion dollars a year as of Dec. 31, 1956.

Sodium Bicarbonate Intoxication.—Two cases of sodium bicarbonate intoxication are reported by A. G. Melrose (*Scottish M. J.* 2:301, 1957). The first was that of a simple-minded young man of 21, who was advised by a relative to take sodium bicarbonate for indigestion. He promptly swallowed 1 lb. of the salt. Violent tetanic spasms ensued, and the man died in coma two hours later before effective medical aid could be given. The other case was that of a male nurse, aged 56 years, who at the age of 29 had been told by a physician to take sodium bicarbonate for indigestion, and who had consumed 2 lb. weekly over a period of 27 years. When seen at the age of 56, he was found to have alkalosis, with some impairment of renal function. He reacted violently to the withdrawal of sodium bicarbonate when he was admitted to hospital—so much so, that small doses had to be reinstituted and then gradually withdrawn. Apparently, the patient consumed sodium bicarbonate largely because the distension of the stomach and subsequent eructation gave rise to pleasurable sensations.

Hemophilus Influenzae.—A marked increase of H. influenzae in throat-swab cultures was reported by David Harley (*Lancet* 2:191, 1957). The patients concerned were allergic subjects in whom a routine bacteriological survey of the upper respiratory tract was carried out, and, with one exception, none of them gave a history of any recent acute febrile respiratory illness. The organism occurred in a heavy growth as the predominating or only organism in the pathogen-selective culture. At exactly the same time of the year in 1918, the late John Matthews reported finding H. influenzae in cultures—just prior to the epidemic outbreak of influenza in 1918.

Diphtheria and Pertussis Immunization.—The Ministry of Health decided to discontinue supplies of alum-precipitated toxoids (APT) and to issue only fluid or formol diphtheria toxoid (FT) and diphtheria toxoid antitoxin floccules (TAF). It is recommended that the primary course of immunization should consist of two injections each of 1 ml. of FT at a minimum interval of 28 days and that a single injection of 1 ml. be used for booster doses. TAF is recommended in a 1-ml. dose for the booster in children over 5 years of age who have been primarily immunized with APT, PTAP, or combined diphtheria-pertussis vaccine and who may, in consequence, be unduly sensitive to FT. There is no change in the advice that immunization against diphtheria should take place at about 8 or 9 months of age, so that protection can be completed before the first birthday, with a booster dose in the fifth or sixth years. The Minister of Health is now satisfied that an effective plain pertussis vaccine can be produced, and he urges all local health authorities to offer immunization against pertussis as part of their arrangements. It is recommended that the first injection be given to children at not later than 3 months of age. On the subject of combined antigens, the Minister sits firmly on the traditional fence. Supplies of combined antigens have not been issued to local health authorities, but most authorities have proposals approved by the Minister which enable them to make arrangements for combined immunization against diphtheria and whooping cough and sometimes also tetanus. It is not possible, without further knowledge, to give any guidance on the use of tetanus antigens in combination with diphtheria or whooping cough antigens.

Influenza, 1953-1956.—In a report from the Public Health Laboratory Service (*Brit. M. J.* 2:8, 1957) on the incidence of influenza from 1953 to 1956, it is stated that morbidity and mortality statistics taken in conjunction with laboratory results suggest that no severe epidemic of influenza occurred in the three winters, 1953-1956, although influenza B was prevalent in most parts of the country during the winter of 1954-1955 and influenza A during the winter of 1955-1956. Localized outbreaks and sporadic cases of influenza A were detected fairly often in the first half of 1954 and the first half of 1955. Sporadic cases and small outbreaks of virus B infection were detected in the late winter of 1953-1954 and less often since the large epidemic that followed. Most of the virus A infections in the period were probably due to a virus of the Scandinavian group. Infections associated with Eire '55 and Dutch '56 viruses occurred but were much less prevalent. Influenza virus B strains isolated in the 1954-1955 epidemic differed antigenically from earlier strains of this group. The frequency with which respiratory illnesses associated with influenza A and B infections were detected between epidemics was compatible with the hypothesis that both diseases are endemic in this country.

Salmonella in Fertilizers.—Fertilizers from human and animal sources are widely used in agriculture and horticulture. Practically all farmlands and many gardens are treated with such fertilizers. Fertilizers of human origin are mainly products from sewage-works, cesspits, and septic tanks, while those of animal origin are mainly blood, bone, horn, and hoof, or derived from fish. Sludge from septic tanks and cesspits is usually spread on the land in the crude state, and that from sewage works is generally processed. It is well known that sewage and sludge may contain pathogens, especially Salmonella. Fertilizers of animal origin come from glue factories or factories specializing in the manufacture of fertilizers, and some are imported. Walker (*Lancet* 2:283, 1957) examined a large number of organic fertilizers and found many of them infected with Salmonella of various types. Such organisms were present in 70% of the bone meal samples, 54% of the samples of dried sludge, 33% of the hoof and horn samples, and 15% of the dried blood samples. The anthrax bacillus was also isolated from all these sources. Walker suggests that organic fertilizers may be a source of infection of vegetables and animals and thus, ultimately, of man. Three of the types most often isolated from the fertilizers were high on the list of Salmonella isolated from human beings. When outbreaks of Salmonella infection are investigated, organic fertilizers have never been considered as a possible source of the organisms. Bone meal is used more than any other fertilizer and is incorporated in many animal feeding stuffs. It could be a serious source of infection.

Antihemophilic Globulin.—The abnormal bleeding of hemophilia is due to the hereditary deficiency of a normal clotting factor called antihemophilic globulin (AHG). The minimum blood level of AHG compatible with effective hemostasis is about 30% of the average normal. As levels fall below this figure, the tendency to bleed becomes progressively greater, until, in severe grades of hemophilia, AHG is virtually absent. It is difficult to raise the blood AHG level to 30% by giving blood or plasma because of the large volume required and because half the AHG is destroyed in 4 to 11 hours. Human blood is unlikely to be a practical source of AHG, as the number of permanent donors required to supply the hemophiliacs in Britain is estimated to be 500,000. Work is proceeding at Oxford University on the extraction of AHG from ox or pig blood. The most active material so far obtained has an activity of about 8,000 times that of the same weight of fresh human plasma. Macfarlane and co-workers described the use of AHG from bovine or pig blood in 22 hemophilic patients undergoing operation or dental extraction (*Lancet* 2:251, 1957). The average dose of 200 to 400 mg. was equivalent in activity to about 2,500 ml. of fresh human plasma. In no case was there abnormal bleeding while the level of AHG was above 30% of normal. In the cases of clean wounds, the temporary raising of the AHG level by one or two injections was followed by complete healing without hemorrhage. In all cases, healing was rapid during AHG treatment.

The AHG used is probably antigenic, since, after 10 to 14 days' treatment with bovine or pig AHG, mild allergic reactions may occur after each injection. The antigenicity is probably low because, in the patients treated, skin tests remained negative and no antibodies or anticoagulants active against the AHG could be demonstrated in the patients' blood. There may be a transitory fall in the platelet count after the injection of bovine material. The allergic reactions occurring after 10 to 14 days' treatment were adequately controlled by antihistaminics. No adverse after-effects were observed in any of the patients. Animal AHG proved lifesaving in at least three patients. Like antitoxins and other serums, AHG as now used is potentially dangerous. The risk of anaphylaxis contraindicates a second course of the same preparation in the same patient. Animal AHG should not be used unless the patient's life is in danger, because once it is given the patient is deprived of a treatment that might be required in some future emergency. In patients with mild hemophilia, the rapid transfusion of large volumes of human plasma permits major and minor surgical operations without excessive bleeding.

Poisoning in Children.—"Prescriber's Notes," a circular sent to physicians by the Ministry of Health, refers to the growing number of fatal cases of poisoning in young children due to swallowing medicinal tablets. At present, half the deaths from poisoning in children are due to this cause, the commonest substances being ferrous sulfate, antihistaminics, and aspirin. The circular states that the only effective way of preventing deaths of this sort is to persuade parents to keep all medicines out of the reach of children at all times. Practitioners can help by continuing to urge their patients to see that this is done and by calling attention, when visiting homes, to any medicines they may see lying about.

Medicine in Russia.—Dr. R. S. Saxton (*British Medical Journal*, supplement page 95, Aug. 17, 1957) states that 70% of the physicians in Russia are women. Towns are divided into districts or sections, each of which is served by a polyclinic staffed by physicians corresponding to general practitioners and by "specialists" whose status corresponds to that of a hospital resident. The polyclinic varies in size and function according to the size and needs of the population it serves. Thus, in industrial areas, there may be one for children staffed by pediatricians and one or more for adults. These may overlap in the service offered, so that the adults of the family of a factory worker might attend the factory polyclinic. Polyclinics, far distant from hospitals, might serve a population of about 70,000 people living within a radius of one and one-half miles. A large one may be staffed by as many as 90 physicians. They work six hours a day, and their pay varies from that of the director at 1,700 rubles a month to a "specialist" at 930 rubles and a section physician at 800 rubles. Those in the higher ranks, such as professors, earn much more. Attempts to convert these figures into Western currency values would be meaningless, but 800 rubels a month equals the wages of a skilled worker in industry working an eight-hour day. Physicians are permitted to do extra part-time work and to engage in private practice.

The polyclinics are well equipped with numerous consulting rooms, radiological and physiotherapy departments, an operating room, antenatal clinic, and a number of small wards containing 50 beds in some of the larger buildings. The ambulant patient may call and make an immediate appointment if the condition is urgent. On an average, the section physician sees five and the "specialist" eight patients an hour. Patients may decide that they need special treatment and bypass the section physician. Consultations and examinations are friendly and orthodox according to British standards. After examination, the physician may write a prescription, send the patient for radiological or laboratory investigations or for special forms of treatment, refer the case to a specialist for advice, or admit the patient to one of the polyclinic beds. The polyclinic thus functions as a small hospital. Incapacity certificates can be given for a week. Periods longer than this must be certified by medical referees. After the patient has been incapacitated for six months, a district medical commission reviews the case.

House calls are made if the patient is unable to attend the polyclinic. The visiting physician has usually five or six such calls a day with three hours to do them in, a car and chauffeur being provided. For urgent cases, emergency doctors are on call. In about 10 to 12% of the house calls, a specialist is called in. Drugs and treatment are similar to those used in England, although a number of obsolete preparations and methods are still in use. Thus, dry cupping is still used, leeches are applied to the mastoid region for the treatment of hypertension, and intramuscular injections of magnesium sulfate are given. The more expensive drugs are free and are prescribed by the physicians. Other drugs are available fairly cheaply and at state drug stores.

Emphasis is placed on prevention. All physicians are expected to spend four hours a month in health education. Suitable patients from the polyclinics are sent to sanitariums or rest homes. Efforts are made to give all workers an annual medical check up. With a population of nearly 200 million and doctors working six hours a day or less, it is difficult to see how this can be done effectively. Women are encouraged to visit a gynecologist three times a year with a view to detecting precancerous conditions. Physicians in Russia are urged to keep up to date. There is a weekly clinicopathological conference at the polyclinics, and every three months section physicians have a tour of duty in the wards, so that they can have further experience of treating inpatients. Surgeons spend a third of the year working in hospitals. Physicians in Russia have a comparatively easy time. Outside their six hours a day they are free of responsibility. Secretarial assistance, nurses, office accommodation, instruments, apparatus, transportation, and, in fact, everything are provided by the state.

Combined Corticosteroid and Aspirin.—Tablets containing 0.5 mg. of prednisolone or prednisone and 0.3 Gm. of aspirin are now commercially available, although existing evidence does not support the view that the therapeutic effect of corticosteroids is enhanced by the simultaneous administration of aspirin, or vice versa. The recommended maximum daily dose of these compound tablets represents a full dose of aspirin (4 Gm.) but a dose of prednisolone (6 mg.) that is usually ineffective in rheumatoid arthritis. It is difficult to see how a formulation of this kind can be of use in the treatment of rheumatic diseases responding to prednisone or in rheumatic diseases for which aspirin is prescribed but for which prednisolone is not indicated.

Hazards in Diagnostic Radiography.—Dr. W. G. Clarke (*Lancet* 2:316, 1957) stated that much unnecessary exposure occurs in diagnostic radiography, even of the chest. During investigations into the dose of radiation to the skin and gonads in a number of radiographic units, he observed that patients often receive unnecessary radiation when standard cones are used. The standard 2.5-in. circular diaphragm in common use gives a gonadal exposure of

0.7 mr. The dose of extraneous radiation in chest radiography can be greatly reduced by inserting a sheet of lead 1 mm. thick with a 1.5-in. square hole in its center at the base of the cone. This reduces the gonadal radiation in men to 0.1 mr, or one-seventh of that received when the standard 2.5-in. circular diaphragm is used. This still gives an adequate chest exposure.

Misuse of Antibiotics.—The Ministry of Health warns against the indiscriminate use of antibiotics. It quotes Jawetz's statement that in the United States only 1 to 5% of the antibiotics and sulfonamides administered are given on proper clinical indications. The ministry states that in Great Britain far too many patients are still exposed to the unpleasant side-effects and occasional dangers to which all antibiotics may give rise. A disservice is done to the community as a whole when organisms are made resistant as a result of the unnecessary administration of these drugs. The ministry further states that antibiotics are rarely needed by afebrile patients and that if a patient is ill enough to receive an antibiotic he is usually ill enough to be in bed. Broad-spectrum antibiotics with their potential unpleasant side-effects are often used instead of penicillin when penicillin would be a better choice. Treatment is far too often continued in the absence of a clinical response, and, even when there is a response, an antibiotic is often given over too long a period. The physician who shows some restraint and who makes penicillin his first choice is likely to do more good and is certain to do less harm than he who prescribes antibiotics indiscriminately.

CORRESPONDENCE

TICK PARALYSIS

To the Editor:—Although more than 360 cases of tick paralysis have been reported in the United States since 1912, this possibility may be overlooked. Prompt recognition and early removal of the tick results in a cure of this bilateral symmetrical ascending motor paralysis. No other neurotoxic disease responds as quickly and as completely. A 2-year-old girl was admitted to the University Hospital, Augusta, Ga., at 2:10 p. m. on April 29. She had attended a picnic on the preceding day where she played in a brushy area. The child was very active and playful until 9 p. m. At that time her mother noted that she was not walking normally. The next morning the child could not get out of bed. She also complained that her mouth hurt. She was seen promptly by her physician who examined her and advised observation for two hours. In less than two hours, the mother noticed that the child's arms were weak and that she could not hold her head erect. The physician then advised hospitalization. She was admitted with a tentative diagnosis of poliomyelitis. She had no fever but her pulse rate was 140. On admission she was in no acute distress. Her sensorium was clear, although it was noted that she occasionally had brief periods of wide-eyed staring. There was a generalized flaccidity of her arms and legs, but she could move her arms and hands a little. Her respiration was slightly accelerated and abdominocostal in type. She had some difficulty in swallowing, but no regurgitation. Her knee-jerks and ankle-jerks were absent bilaterally. Her abdominal reflexes were present but sluggish. Laboratory tests including a lumbar puncture were essentially normal. A search for a tick was made and at 6:30 p. m. a female Dermacentor variabilis was found in the occipital region. It was removed by the use of ether and gentle traction. The hypostome was intact. Five hours later there was slight improvement in the patient's muscular power. At this time, 100 mg. of hydrocortisone was given intravenously. Six hours later a second dose was given. Fourteen hours after the tick was removed the child could pull herself up in her crib and 25 hours after the tick was removed, she was capable of normal activity.

One unusual aspect of this case was the short period of time from attachment of the tick to the onset of paralysis. Several investigators have said that the gravid female tick must be attached for a period of five to eight days before causing paralysis. This child became paralyzed about 18 hours after the tick made contact with her body. Prior to April 28 she had not been in an area known to be infested with ticks. Also, the tick was small and relatively unengorged, measuring 4 by 7 mm. To account for the early onset of paralysis in this case it must be assumed that the tick had fed on another human being or other animal shortly before attaching to the child or that it is not always necessary for the tick to feed for several days before transmitting its neurotoxin. Another interesting aspect of this case was the use of corticosteroids. There are no reports of the use of corticosteroids in tick paralysis. Because of the rapid progression of the paralysis and in view of the child's early swallowing difficulty corticosteroids were given, admittedly on an empirical basis. Comparison of this case with experience with other patients indicates that hydrocortisone in the amount given neither hastened nor retarded recovery from the paralysis.

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MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Hemorrhagic Pericarditis, Pleurisy, and Pneumonia Complicating Recent Myocardial Infarction. H. Dressler, J. Yurkofsky and M. C. Starr. Am. Heart J. 54:42-49 (July) 1957 [St. Louis].

Recent myocardial infarction was complicated by intensely hemorrhagic pericarditis, pleurisy, and pneumonia, respectively, in 3 men between the ages of 52 and 59 years. Pain of the pericardial type and congestive heart failure occurred 6 weeks after myocardial infarction in the first patient. Eleven weeks after onset of the coronary infarction, symptoms and signs of pericardial effusion were noted. Pericardial paracentesis revealed intensely bloody fluid and was followed by rapid improvement. Cultures of blood and aspiration fluid yielded no growth. The patient had not received anticoagulant therapy. Myocardial infarction was accompanied by an unusually prolonged febrile period in the second patient. A loud pericardial friction rub that was audible for 10 days, electrocardiographic changes, and enlargement of the cardiac shadow in the roentgenogram supported a diagnosis of pericarditis with effusion. Signs of bilateral pleural effusion became manifest on the 13th day of illness. Thoracentesis yielded bloody fluid. There were none of the usual indications of pulmonary infarction. Anticoagulant therapy was used for 6 days only. The prothrombin time never exceeded therapeutic levels and had returned to normal 3 days before hemorrhagic pleural effusion became manifest. Acute myocardial infarction was complicated by pericarditis, pneumonitis, and pleurisy in the third patient. Hemorrhagic pneumonia was the predominating complication. It developed on the third day of illness and spread rapidly, involving both lungs. No responsible micro-organism was discovered. Antibiotics were of no avail. Improvement followed administration of cortisone. Treatment with bishydroxycoumarin (Dicumarol) was given initially and was discontinued after 4 days. The prothrombin time was on 2 days only above 30 seconds, the maximum being 36 seconds. The pulmonary process lasted for about 4 weeks.

The cases of these 3 patients and similar ones reported in the literature under the heading of hemopericardium complicating myocardial infarction presented features such as were described recently as characteristic of a post-myocardial-infarction syndrome (*J. A. M. A.* 160:1379 [April 21] 1956). Among the significant features of the post-myocardial-infarction syndrome a tendency to hemorrhagic inflammation should be included. The fact that anticoagulant therapy was not used in the case of the first patient with hemorrhagic pericarditis and was employed for only a few days in the other patients, the prothrombin time not exceeding therapeutic levels, indicates the necessity to consider other causative factors, besides anticoagulant therapy, responsible for hemorrhagic complications of myocardial infarction.

A New Syndrome of Parotitis with Herpangina Caused by the Coxsackie Virus. J. G. Howlett, F. Somlo and F. Kalz. Canad. M. A. J. 77:5-7 (July 1) 1957 [Toronto].

The Coxsackie virus, first isolated and described by Dalldorf and Sickles in 1948, has been isolated with regularity from patients with herpangina, pleurodynia, short summer pyrexias, and aseptic meningitis. Clinically, herpangina is characterized by greyish-white papulovesicular lesions of 1 to 2 mm. in diameter with erythematous bases located on the anterior pillars, soft palate, and tongue. This particular disorder occurs in small children during the summer in small epidemics and is further characterized by a sudden onset of fever with accompanying sore throat, dysphagia, anorexia, occasional abdominal pain, and headache. The fever usually persists for 2 or 3 days and the lesions 4 to 6 days. Four cases of parotitis associated with vesicular lesions on the oral mucous membrane from which Coxsackie virus (group A) has been isolated are reported. No increase in antibody titer in any of the samples for mumps and herpes simplex virus was found during the convalesence period, nor was any found in the initial samples. All 4 patients were shown to have Coxsackie virus in the saliva, and in 2 of the 4 the virus was found in the stool. In 2 additional cases resembling herpangina, Coxsackie virus could not be demonstrated.

The place of publication of the periodicals appears in brackets preceding each abstract.

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Aortic Arch Syndromes: A Survey of 5 Cases. J. Burstein, B. Lindström and C. Wasastjerna. Acta med. scandinav. 157:365-378 (No. 5) 1957 (In English) [Stockholm].

The authors report on 3 women and 2 men with the aortic arch syndrome. The first patient, a 56-year-old woman, had been operated on twice for tumors of the ovaries, and the ovaries were destroyed by radiation when the patient was 41. Myocardial infarction occurred when she was 43 and 47. When she was 50, an ulcer occurred in the nasal septum which extended gradually, and the whole nose became necrotic. Somewhat later she suddenly became blind in one eye, and in the following year the vision of the other eye was greatly weakened. She was admitted to hospital because of attacks of giddiness and anginal pain. Arteriography revealed obliteration of the left subclavian artery, distal narrowing of the left common carotid artery, and obliteration of the left external carotid artery at its base. Intensive treatment with corticotropin and prednisone was ineffective, but distinct improvement by epithelization of the facial ulcer was obtained with anticoagulant therapy and treatment with beta-pyridyl carbinol. The patient had almost all the symptoms which Ross and McKusick observed in patients with aortic arch syndrome. The removal of the ovaries must have favored the development of atheromatosis. Her coronary attacks were most likely caused by severe coronary atheromatosis. The ineffectiveness of steroid therapy also pointed to atheromatosis. An atheromatous aortic arch syndrome seemed to be most likely in this patient.

The second patient, a 31-year-old woman, had had attacks of fainting since her adolescence. In the past 6 years her fingers had occasionally turned white without any reason; she had migraine-like headaches accompanied by disturbances of the visual field, and in the past year she had had a myocardial infarction. Arteriography revealed obliteration of the left subclavian artery. The possibility of atheromatosis as the causative factor in the aortic arch syndrome in this patient was supported by hereditary tendencies, hypoplasia of the sex organs (the appearance of angina pectoris in connection with nonappearance of menstruation), and lack of genuine rheumatic infection, lack of tachycardia, and increased sedimentation rate. The third patient, a 27-year-old woman, had repeated attacks of sore throat in her childhood. At the age of 13 she had rheumatic disease of the joints. Her erythrocyte sedimentation rate was constantly increased, she had persistent tachycardia, her left arm tired rapidly, and she had attacks of giddiness. Obliteration of the left subclavian artery was revealed by arteriography. The aortic arch syndrome in this patient was caused by the rheumatic disease. In the 4th patient, a 51-year-old man, with numbness and subnormal blood pressure in the left arm, degenerative damage in the retina, and intermittent claudication in the legs, the aortic arch syndrome was probably caused by atheromatosis, with which the patient's age and sex were consistent. The severe circulatory disturbances in the legs and the high cholesterol level in the blood also favored the assumption of atheromatosis. In the 5th patient, a 56-year-old man, whose condition was completely dominated by obliterative processes in the lower extremities, examination revealed pulselessness of the right radial artery and of the cubital, axillary, and carotid arteries. The femoral arteries were pulseless on both sides. This psycholabile patient left the hospital before arteriography could be performed. Of the 3 causative factors of the aortic arch syndrome, namely, atheromatosis, thromboangitis obliterans, or syphilis, the first one seemed most probable.

The authors believe that atheromatosis is a far more common causative factor than the available literature shows. It seems noteworthy that in the first 2 patients the course of the disease was dominated by coronary symptoms and myocardial infarctions which, in all probability, were caused by the basic vascular disease producing the aortic arch syndrome. While administration of corticotropin, cortisone, and antibiotics should not be considered in the treatment of the aortic arch syndrome of atheromatous origin, the administration of anticoagulants seems to be beneficial.

Gastric Ulcer and the ABO Blood-Groups. R. H. Balme and D. Jennings. Lancet 1:1219-1220 (June 15) [London].

On the basis of the assumption (1) that patients with carcinoma of the stomach are more likely to belong to blood group A and those with duodenal ulcers to group O than are controls and (2) that patients with gastric ulcers come somewhere in between, it had been suggested as an explanation that blood group A was associated with a tendency for the mucosa of the body of the stomach to atrophy and that the atrophic mucosa and consequent hypochlorhydria produced a lessened liability to duodenal ulcers and an increased liability to carcinoma. The authors tested this hypothesis by investigating whether blood group A was in fact associated with carcinoma of the body rather than with carcinoma of the antrum. They could do this because in a series of cases of relatively early carcinoma they had already determined the probable site of origin. Contrary to what the hypothesis demanded, there was an excess of group O patients among those with carcinomas of the body and of group A patients among those with carcinomas of the antrum. These results being only on the borderline of statistical significance, they were not reported until further study showed that simple gastric ulcers behaved in a similar way, i. e., simple ulcers of the antrum tended to be associated with blood group A, whereas the common gastric ulcer just above the angulus was associated with blood group O.

The authors were able to classify with regard to the site of the gastric lesion and the sex and blood group of 192 patients with gastric ulcers and 119 with carcinoma of the stomach. They found that blood group A predominated when the lesion was in the pyloric antrum and blood group O when it was in the body of the stomach. They believe that the association between gastric carcinoma and blood group A on the one hand and between gastric ulcer and blood group O on the other may be attributable to the fact that most carcinomas are in the antrum, whereas most gastric ulcers are in the body of the stomach.

Increasing Prevalence of Unexplained Liver Necrosis. J. G. Brunson, P. L. Eckman and J. B. Campbell. New England J. Med. 257:52-56 (July 11) 1957 [Boston].

A review of current autopsy material from the University Hospitals in Minneapolis revealed what appeared to be an increase in the prevalence of unexplained liver necrosis. To evaluate this impression, 3,229 autopsy protocols of patients examined at the University Hospitals morgue from 1946 through 1955 were reviewed and analyzed for gross and microscopic evidence of liver necrosis. In the preliminary survey, every case of liver necrosis was included, and the microscopic slides examined. After this examination, and in conjunction with a study of the clinical and autopsy records, the following cases were excluded: eclampsia; focal central necrosis of the liver associated with shock, cardiac failure, or both; the necrosis that may be associated with cirrhosis; "subacute yellow atrophy"; the necrosis associated with intrahepatic neoplasms; cases of scattered focal areas of hepatic necrosis associated with gram-negative bacteremia and shock; the necrosis associated with chemical poisons; the necrosis associated with abscess formation; and the cases of ischemic liver necrosis associated with such vascular disease as polyarteritis. With these exceptions all cases in which there were classic liver infarcts and all cases in which there were ischemic or hemorrhagic areas of necrosis involving 2 or more contiguous lobules of the liver were included.

Of the 62 cases collected over the 10-year period from 1946-1955, 45, or 72%, occurred in the last 3 years. There were 42 males and 20 females, a ratio of approximately 2:1, and there was a wide range of ages, including 1 newborn infant. Of the total number, 43 occurred in patients in whom some surgical procedure had been performed. In 5 of the 62 patients the hepatic necrosis was associated with direct trauma and in 6 with hepatic vascular occlusion. In the remaining 51 patients no anatomic mechanism for the necrosis was demonstrated. The high correlation between hepatic necrosis and the administration of sympathomimetic amines suggests that this group of drugs may be an important factor in the pathogenesis of the hepatic lesions.

Treating Tuberculosis in a Military Hospital. R. M. Burke and J. A. Wier. U. S. Armed Forces M. J. 8:963-971 (July) 1957 [Washington D. C.].

The authors studied the records of the tuberculosis section of the Fitzsimons Army Hospital in Denver for the period 1952 to 1955 inclusive and report on the now evolving pattern of management. The patients were young military personnel with recent tuberculosis, civilian dependents (mainly wives of servicemen), and older Veterans Administration patients with predominantly advanced tuberculosis of long duration. The criteria for approved discharge were negative sputum, cavity closure, and roentgenographic stability for from 4 to 6 months. The time required to reach this goal averaged 12 months for patients with minimal disease, 15 months for those with moderately advanced disease, and 15 months or more for those with far-advanced disease. Although the period of hospitalization has been reduced for the military patients by allowing them to complete the last 3 to 6 months of drug therapy while on convalescent leave, the sojourn in the hospital is still longer than that in civilian practice. Only 50% of the military patients treated for active tuberculosis were found to have Mycobacterium tuberculosis in their sputum. Most of the patients with a positive sputum reverted to negativity in 3 months.

All patients with active disease were given chemotherapy for a minimum of 12 months whether the lesions were in the lymph nodes, kidneys, lungs, or bones and joints. Combined therapy with 2 drugs—300 to 450 mg. of isoniazid daily with 12 Gm. of aminosalicylic acid daily, isoniazid with 2 Gm. of streptomycin sulfate every 3 days, or aminosalicylic acid and streptomycin—was employed. As a companion drug aminosalicylic acid appeared to be superior to streptomycin sulfate. Prolonged bed rest is going to play a minor role in the treatment program, since experience with inhospital ambulant treatment has been very encouraging. With this trend a more aggressive inhospital rehabilitation program is possible. In 1954, 50% of the military patients treated to maximum hospital benefits had pulmonary resection. Since then this percentage has been declining, with fewer segmental resections being performed for minimal residuals. This decline appears to be due to an increasing confidence in drugs, particularly isoniazid. Temporary collapse measures have been abandoned. Treatment results of military patients are excellent because disciplinary powers result in practically all being treated to the inactive stage of disease. Their relapse rate on follow-up after 3 years of active duty is 3%. The serviceman contracting tuberculosis is now returned to active duty, usually in less than 2 years, where assignments to fit his physical capabilities are provided.

Conservative Treatment of Cholecystitis: Complications and Late Results. S. Lyndrup and K. Kristensen. Ugesk. læger 119:743-754 (June 13) 1957 (In Danish) [Copenhagen].

Conservative treatment was applied in 272 patients with cholecystitis. Women dominated in all age groups. The total mortality was 17, or 6.2%. Of the 194 patients subjected to conservative treatment, 9 died. Because of compulsory indication, 28 patients were operated on on admission or soon thereafter, in most cases by cholecystolithotomy, with 7 deaths. Perforation of the gallbladder was particularly frequent in male patients; it occurred twice as often in patients aged over 60, and more than half of these died. The material illustrates the surgeon's difficulty in balancing between well-indicated operation and contraindicating general condition. The cases with perforation underline the necessity of early admission, preferably in the course of a few hours, especially for patients over 60. Follow-up of 199 patients for from 5 to 10 years showed 44.2% to be free from symptoms, 24.1% to be relatively well, and 31.7% to be in poor condition or to have been operated on later. Over 40 patients had died at the time of the follow-up. Cancer of the liver, biliary tract, pancreas, or stomach had developed in 7 patients. The authors made the following conclusions: 1. All patients with marked cholecystitis should be hospitalized at once at the start of the attack, this being especially true for older, feeble patients, for whom a few hours' observation at home may endanger life. 2. If conservative treatment is to be instituted, observation must be careful, frequent, and carried out by an experienced clinician. General treatment must be immediate, with adequate fluid and blood administration, possibly with antibiotics and bronchial toilet, and laboratory examinations of liver, pancreas, and kidney function must be carried out often. 3. Operation is advised for all patients with gallstones who have had one attack of severe cholecystitis, if there are no essential contraindications.

The Management of Hepatic Coma in Relation to Protein Withdrawal and Certain Specific Measures. W. H. J. Summerskill, S. J. Wolfe and C. S. Davidson. Am. J. Med. 23:59-76 (July) 1957 [New York].

The response to treatment was studied in 65 episodes of hepatic coma in 64 patients between the ages of 32 and 76 years, most of whom were alcoholics with severe liver cirrhosis. Hepatic function was the most important factor in prognosis. Of the 63 patients, 34 were treated with a regimen of protein withdrawal from the diet, oral administration of broad-spectrum antibiotics, and enemas, in an attempt to reduce the formation and absorption of toxic nitrogenous substances in the gastrointestinal tract. Twenty-one patients improved during this treatment and 13 recovered. Protein withdrawal and antibiotics reduced arterial blood ammonia concentrations. Thirty of the 64 patients received varying amounts of protein during hepatic coma; 5 patients showed improvement and 2 survived, but the 2 groups were not entirely comparable.

Additional therapy with glutamic acid, aspartic acid, cortisone, hydrocortisone, or lipoic acid was given to 14 of the 34 patients with protein withdrawal therapy and to 26 of the 30 patients who were allowed protein during treatment. No additional significant benefit could be attributed to these specific agents. Like glutamic acid, aspartic acid had a transient effect on blood ammonia values in 2 patients. Lipoic acid had no constant effect on arterial blood ammonia, pyruvate, or alpha-ketoglutarate concentrations. Treatment by protein withdrawal from the diet and with broad-spectrum antibiotics is considered the therapy of choice, but the authors make clear the fact that the problems of pathogenesis and treatment of hepatic coma have not been resolved.

Further Observations on Patients with Malignant Carcinoid. A. Sjoerdsma, H. Weissbach, L. L. Terry and S. Udenfriend. Am. J. Med. 23:5-15 (July) 1957 [New York].

The authors report on 19 patients with malignant carcinoid. Clinical and laboratory findings in 6 of these patients had been reported by the authors in a previous paper, and the clinical findings in the additional 13 patients confirmed the previous descriptions by the authors and by other workers of a syndrome manifested by vasomotor disturbances, chronic diarrhea, respiratory distress and valvular disease of the right portion of the heart, although some of the patients did not show all these manifestations. A 2-year follow-up of the patients showed that the occurrence of episodic pain over the liver with fever and leukocytosis but negative blood cultures was a frequent complication. These episodes, which usually subsided spontaneously, may have been due to hemorrhagic necrosis of tumor nodules.

Biochemical findings in the previously reported 6 patients consisted of elevated blood levels of 5-hydroxytryptamine (serotonin) and a greatly increased urinary excretion of the serotonin metabolite, 5-hydroxyindolacetic acid (5HIAA). Measurements of serotonin and 5HIAA which were performed on 8 of the 19 patients confirmed previous findings of excess serotonin production in this disorder. Also, the findings of low fasting plasma tryptophan and urinary N'-methylnicotinamide in some patients substantiated previous suggestions of a disorder in tryptophan metabolism. A tracer study, which was performed in 1 patient with the serotonin precursor 5-hydroxytryptophan, enabled calculation of the tumor pool of *serotonin* (2,800 mg.), its turnover rate (half life of 5½ days), and the tumor mass (between 1 and 3 kg.). Increases in the urinary excretion of 5HIAA in a patient during severe flushing episodes suggested that the flushes were mediated by increased serotonin release, though no concomitant rise in the blood serotonin level could be measured. Cardiac catheterization studies revealed no measurable differences in the serotonin content of mixed venous and arterial blood which, if present, might account for predominant involvement of the right side of the heart. It is suggested that if a pulmonary arteriovenous serotonin difference does exist, it is in that portion which is free in the plasma. The absence of serotonin in cerebrospinal fluid and the essentially negative results of psychological evaluation seemed to indicate that serotonin does not penetrate readily into the central nervous system.

With the possible exception of chlorpromazine, drug therapy has proved ineffective. The adminis*tration of chlorpromazine* appeared to decrease the frequency and severity of flushing reaction, to allay anxiety, and to control the nausea which afflicted some of the patients. Although reports in the literature suggest that chlorpromazine antagonizes certain effects of serotonin, it is possible that the efficacy of chlorpromazine in patients with carcinoid is unrelated to interaction with serotonin. An agent which effectively blocks the physiological effects of serotonin would be a useful addition to the management of patients with malignant carcinoid.

Determination of 5-Hydroxytryptamine, 5-Hydroxyindole Acetic Acid and Histamine in 33 Cases of Carcinoid Tumor (Argentaffinoma). B. Pernow and J. Waldenström. Am. J. Med. 23:16-25 (July) 1957 [New York].

Determinations of 5-hydroxytryptamine (serotonin, 5HT) in the blood serum and urine and of 5-hydroxyindole acetic acid (5HIAA) in *urine* were made in 33 patients with abdominal carcinoid tumor (argentaffinoma). The patients were divided in 2 groups. The first group consisted of 22 patients with metastatic abdominal carcinoid tumor in whom the determinations of serotonin and its metabolite were made before operation or in whom the tumor was not completely resected. The second group consisted of 11 patients in whom probably complete resection of the tumor had been performed. The 5HT analyses showed increased values in blood and/or urine in 17 patients of the first group, with figures ranging from 0.15 to 5.2 mcg. per cubic centimeter of blood serum and 0.1 to 4.2 mcg. per cubic centimeter of urine. Abnormally high 5HIAA values ranging from 14 to 452 mg. per 24 hours were obtained in 19 patients. In the second group of patients the 5HT and 5HIAA figures were normal or slightly increased.

The urinary excretion of histamine was also studied in 8 of the 22 patients in group 1 and in an additional patient who had a malignant tumor of unknown primary site with metastases to the lungs and skeleton; biopsy of a skeletal metastasis revealed a carcinoma of unknown type, possibly a carcinoid. Increased excretion of histamine was observed in 7 of these 9 patients, with figures ranging from 27 (borderline value) to 6,800 mcg. per 24 hours. The fact that both histamine and 5HT were found in increased amounts in the urine of these patients suggests some relationship between these substances in the body. It might be assumed that the tumor cells produce both 5HT and histamine. Another explanation might be that increased formation of 5HT in the tumor cells leads to secondary release of histamine.

One patient in the first group was of unusual interest because of high values for 5HIAA *in her* urine, *chronic flushing of the face, signs of* pulmonary heart disease, and "pellagra." The microscopic examination of tissue removed at operation revealed a nonmalignant ovarian teratoma with argentaffine cells in large numbers. After operation all symptoms (except the cardiac) disappeared, and the excretion of 5HIAA has remained normal.

Davidson's Megaloblastic Anemia. M. Georgesco and L. A. Long. Presse méd. 65:1056-1057 (June 5) 1957 (In French) [Paris].

The authors treated successfully with folic acid 2 patients with idiopathic refractory megaloblastic anemia and with hydrochloric acid in the gastric content. In 1948 Davidson reported on 25 cases of idiopathic megaloblastic anemia, refractory to highly purified and concentrated liver extracts administered intramuscularly. These extracts were, however, very active in Biermer's pernicious anemia. Davidson suspected, therefore, that there is a hemopoietic factor in the liver that is destroyed during the purification of the liver extract. He demonstrated that this factor was folic acid, which was very active both in cases of Biermer's anemia and in idiopathic megaloblastic anemia. Folic acid was *ineffective* in some cases, whereas the extract of the proteolysis of the liver proved highly effective. Davidson thought that there must be other active factors not yet isolated. Later it was proved that folic acid must be reduced to folinic acid to be effective. Vitamin B^{12} acts only as a factor liberating folic acid. In Biermer's pernicious anemia there is a lack of vitamin B^{12}, whereas in Davidson's anemia there is a lack of folic acid. It is not understood why certain types of idiopathic megaloblastic anemias respond to purified liver extract and to vitamin B^{12}, whereas others resist this therapy but respond to folic acid or to the extract of the proteolysis of the liver. Vilter conjectures that vitamin B^{12} and folic acid intervene at different stages of the chain reaction leading to the formation of normoblastic nucleic acids. Folic acid, transformed in the organism into folinic acid, acts at the initial stages catalyzing a synthesis of pyramidines, whereas vitamin B^{12} enters at a later stage of transformation of pyramidines into nucleosides. According to Vilter, lack of vitamin B^{12}, which enters only at a late stage in the chain reaction, causes only one type of difficulty, which is Biermer's anemia. The absence of folic acid, which acts at the initial stages, causes various types of refractory megaloblastic anemias, such as megaloblastic anemia of obesity, infant's anemia, anemia of liver disease, anemia of tropical and nontropical sprue, and idiopathic refractory megaloblastic anemia. The exact relationship between vitamin B^{12} and folic acid is still not clear. It is known, however, that deficiency of vitamin B^{12} entails in the long run a secondary deficiency of folic acid.

Rheumatoid Arthritis of the Cricoarytenoid Joints.
W. S. C. Copeman. Brit. M. J. 1:1398-1399 (June 15) 1957 [London].

Rheumatoid arthritis has been described affecting almost every diarthroidal joint in the body and should be extended to include the cricoarytenoid joints. These joints are small, extremely mobile, and involved in phonation and normal full respiration. The muscles controlling the movements of the cricoarytenoid joints are innervated by the recurrent laryngeal branch of the vagus. Unilateral paralysis of this nerve is common and causes hoarseness, but not loss of voice. Bilateral paralysis of the nerve results in loss of voice and stridor on deep respiration. Three cases are described which demonstrate the varying stages in this syndrome, e. g., acute and subacute recurrent laryngeal episodes and complete ankylosis of both cricoarytenoid joints in the final stage of rheumatoid disease. The differential diagnosis in these cases lies only between rheumatoid arthritis involving the cricoarytenoid joints and paralysis of the recurrent laryngeal nerves. The involvement of the cricoarytenoid joints may occur as an integral part of the polyarthritic process.

SURGERY

Spontaneous Subcortical Haemorrhage in Young Adults: A Report of 7 Surgically Treated Cases.
R. A. Daws. Brit. J. Surg. 44: 583-588 (May) 1957 [Bristol, England].

The author reports observations on 7 patients with intracerebral hemorrhage who ranged in age from 19 to 34 years and who were treated surgically. With one exception, angiography failed to show vascular malformation. Hypertension was absent, and there were no clinical signs of arterial disease. Syphilis was excluded in all but one of the patients by serologic tests. There was no history of head trauma. Angiography raised the question of a congenital angiomatous malformation in 1 patient, and in this patient this seemed to be the most likely explanation of the cerebral hemorrhage, although there was no history to suggest such a lesion. Hemorrhage, however, is a recognized complication of these congenital malformations and may well be the presenting symptom. The fact that the vascular abnormality could not be demonstrated on repeat angiography after the recovery of the patients may be of some significance in the question of etiology in these cases in general. It is possible that after the rupture of the angioma, with the formation of an intracerebral clot, partial destruction of the lesion occurred and this was followed by thrombosis in the remainder. Operative experience with these malformations has shown that if the arteriovenous shunt is removed then the secondarily dilated vessels will revert to normal. Disruption of the shunt as the result of hemorrhage would presumably have the same effect.

The most important feature of the clinical picture was the sudden onset of the illness and the gradual progression of the symptoms. The patients, apparently in perfect health, were suddenly struck down, but the dramatic picture usually associated with adult apolexy did not occur, and there was no loss of consciousness unless epilepsy supervened. Headache was present in all but one patient. Vomiting occurred as an early symptom in 4 of the 7 patients and during the course of the illness in 2. Focal disturbance of cerebral function was an early and often presenting feature. In all but one patient hemiparesis, of varying severity, was a prominent sign and was frequently associated with a disturbance of sensation. Dysphasia was also commonly present. Raised intracranial pressure occurred in all but one patient as shown by the presence of papilledema or raised pressure on lumbar puncture. In 4 of the 5 patients who had a lumbar puncture performed there was evidence of some bleeding into the cerebrospinal fluid. The choice of operation rests between (1) simple aspiration of the fluid part of the hematoma through a burhole and (2) craniotomy and the complete evacuation of the clot under direct vision. The latter is the operation of choice. Five of the 7 patients recovered completely, but 2 have a moderately severe residual hemiparesis with sensory loss. This shows that with surgical treatment the prognosis is relatively favorable.

Effect of Division of the Hypophysial Stalk in the Hypertensive Patient. C. Keedy. Am. Surgeon 23:439-447 (May) 1957 [Baltimore].

The author presents the histories of 5 patients in whom the hypophysial stalk was divided to observe the effect on hypertension. The group included 2 men and 3 women, ranging in age from 33 to 55. The patients have been followed for from 1 to 5½ years. One showed no significant change but was completely relieved of her headaches. One patient with secondary hypertension due to renal disease showed marked lowering of her blood pressure but a slowly progressive downhill course terminating in death from renal failure without elevation of the blood pressure. This suggests that the neurohypophysis is involved in the mechanism that produces renal hypertension and tends to confirm the work of Sattler and Ingram in dogs. Two patients showed disturbance of gonadotropic hormone, 1 by amenorrhea and 1 by mild gynescomastia. Temporary diabetes insipidus occurred in 1 patient. Two patients with hypertensive encephalopathy with convulsive seizures preoperatively have had no further seizures. Two patients who had evidence of cardiac failure preoperatively have had no evidence of it postoperatively. One patient had severe optic atrophy and 1 has mild optic atrophy. The best fall in blood pressure after operation was observed in those patients who showed a lowering of the blood pressure after therapy with etamon chloride or sodium amytal. No definite conclusion can be drawn from these meager observations, yet the results suggest that section of the pituitary stalk in a hypertensive patient (1) will produce significant lowering of the blood pressure in most patients, (2) will not produce permanent diabetes insipidus, and (3) may produce signs of gonadotropic hormonal deficiency.

The Prognosis of Atrial Septal Defect. M. Campbell and C. Neill. Brit. M. J. 1:1375-1383 (June 15) 1957 [London].

Atrial septal defect as a recognized clinical entity was first described in this country by Bedford. Since that time, the diagnosis had been made with confidence and increasing frequency. Of the many young children seen with the classic picture of atrial septal defect, nearly all were thin and slightly built, with long, narrow chests and limbs (gracile habitus) and pigeon breasts. They exhibited remarkably few signs and/or symptoms and possessed large hearts. The most characteristic physical sign is the gross discrepancy between the small pulse and the widespread overactive precordial pulsation. This excessive pulsation has 3 components: (1) an apex beat that is tapping in character and is displaced outward, (2) a right ventricular thrust or lift that is usually visible and almost always palpable in the third left intercostal space, and (3) a large pulmonary artery that may give rise to visible systolic pulsations in the second space. Wide splitting of the second heart sound has been valuable as a diagnostic aid. Radiological studies show the triad of a large right side of the heart, large pulmonary artery, and a hilar dance with expansile pulsation spreading to smaller branches. Negative findings equally important in diagnosis are absence of enlargement of the aorta, of the left ventricle, and of the left atrium. The electrocardiogram is characterized by increased QRS length, rSR′ pattern, no real primary and secondary R waves, and some notching of the R waves. Differential diagnosis of this defect must preclude ostium primum, anomalous pulmonary venous drainage, ventricular septal defect, and simple pulmonary stenosis. The most common cause of heart failure and death was found to be failure of the right side of the heart, followed closely by pulmonary hypertension with central cyanosis, severe symptoms with some rise of pulmonary pressure, failure of the left side of the heart, and pulmonary embolism, in that order. Prognosis is excellent in children, diminishing somewhat in the third decade and becoming progressively poor in successive decades. The onset of auricular fibrillation in these cases is serious, with death following almost inevitably within the year. Mitral stenosis in patients with this defect obscured the wide-splitting second heart sound.

Indications and Results of Mitral Commissurotomy. G. Invernizzi. Sett. med. 45:135-139 (March) 1957 (In Italian) [Florence, Italy].

The authors report on 26 patients, 17 to 46 years old, subjected to mitral commissurotomy. The decision to operate was reached in each patient after consideration of the extent and form of the pulmonary tension, the condition of the myocardium, and the extent and form of the valvular obstruction. Five patients suffered a progressive cardiac insufficiency which compelled them to stay in bed; 15 presented sporadic episodes of decompensation and dyspnea, in some patients only on exertion; and 6 patients presented subjective symptoms only. There were no operative deaths; 2 patients died within the first month after the operation. Commissurotomy was beneficial to all patients except one. Dyspnea and pulmonary edema disappeared, and the patients responded to cardiokinetic drugs. A slight change in auscultatory findings occurred in 4 patients only. Pleuropericarditis in the left side was observed in more than half of the patients. Observations made 6 months to 5 years after the operation revealed persistence of the improvements. Of special interest were 6 patients with mild preoperative functional disturbance who were operated on in view of eventual stress they were facing (delivery, pregnancy, major operation, or need to employ exertion in their work). The success obtained in these patients opens the way to the consideration of mitral commissurotomy as a prophylactic measure.

Perforation of Stress Ulcers of the Esophagus Following Thermal Burns. J. R. Derrick, A. H. Wilkinson and J. M. Howard. A. M. A. Arch. Surg. 75:17-20 (July) 1957 [Chicago].

Evidence is cited in this report of 2 cases that perforation and rupture of the esophagus previously considered as separate entities, can be present in combination, as ulceration of the mucosa weakens esophagus to such an extent as to predispose it to rupture from even so minor a stress as vomiting. Autopsy findings in 2 patients who had sustained 90 to 95% third-degree burns indicated an ulcerated mucosa and rupture at the site of ulceration. The antemortem diagnosis of esophageal rupture was not made, and it is not made in 75-85% of those persons with nontraumatic perforation. The predilection to rupture and/or perforation of the esophagus is further augmented by incoordinate vomiting, ulceration, esophagitis and general lack of support in the lower portions of the esophagus. The dominant factor in alimentary canal perforation is not the degree of pressure per se but rather the rapidity with which the intraluminal pressure is increased. Severe thermal trauma, possibly by initiating the alarm reaction, has resulted in acute esophageal ulcerations within hours, both clinically and experimentally. Rupture not associated with intrinsic disease or ulceration is postulated as being due to incoordination of the vomiting mechanism, spontaneous perforation having been reported in association with central nervous system disease, pyloric obstruction, or chronic vomiting.

The Abuse of Intestinal Intubation. J. J. Farrel and G. B. Reams. Am. Surgeon 23:401-408 (May) 1957 [Baltimore].

Nasogastric suction and intestinal intubation as adjuvants in the treatment of intestinal obstruction have, rightfully, been credited with a significant contribution in the lowering of mortality rates in these conditions. However, failure to be cognizant of the inherent dangers and difficulties of intubation has resulted in 2 major ills: (1) the relegation of the intubation and subsequent management thereof to the least experienced of house officers and through them to the nursing staff; (2) the unwise selection of a tube predicated on its reputed ability to be more easily passed through the pylorus and the increased intraluminal size of the tube. Analysis of the complications occurring with intubation demonstrates that most of these are associated with prolonged use of intubation as a definitive measure rather than its utilization as a preoperative and postoperative adjuvant. While necrosis, knotting, and perforation can occur rapidly, these and the subsequent inability to withdraw the tube are usually associated with the utilization of the tube for a period of several days. Prolonged usage of these tubes is also followed by an increased rate of upper respiratory complications associated with excessive nasopharyngeal secretions from irritation of the tube, otitis media, nasopharyngeal abscesses, and stenosis of the larynx and esophagus. In addition, it must be remembered that a tube in the small intestine does not necessarily remove accumulated fluids in the stomach itself, and vomiting with aspiration can and does occur.

The authors present the histories of 7 patients to illustrate the abuse of intestinal intubation. One patient died shortly after an operation for multiple perforations of the small intestine, resulting from traction during attempts at removal of the tube. In another patient a Harris tube was left in place an extended length of time and became knotted. Observations on other patients show that a balloon should be used in which excess air can be removed with the tube in place; that the addition of mercury to a deflatable balloon tube defeats its purpose, in that the mercury rarely if ever can be withdrawn successfully; that some tubes will not pass through the entire intestine and must be removed surgically; that persistent efforts to remove a tube may lead to necrosis of the intestinal wall; and that, while free mercury in the intestinal tract may cause no difficulty, there have been reports of fistula formation and abscesses with lodging of the mercury in diverticula.

Bronchial Adenoma. K. Fraser. Brit. J. Surg. 44:570-581 (May) 1957 [Bristol, England].

The wider use of bronchoscopy in the examination of persons with chest disease has demonstrated that bronchial adenoma is not as rare as it was formerly believed to be. The author reports findings on 12 patients observed in the course of 13 years in a thoracic surgery unit of a Glasgow hospital. Bronchial adenoma is tumor of slow growth, almost invariably arising in relation to a stem bronchus of a lobe or lung; consequently it was seen on bronchoscopic examination in every one of the 11 patients bronchoscoped. The gross characteristics of these tumors are so typical that the bronchoscopist can often suggest the diagnosis. There is partial or complete occlusion of a stem bronchus to a lung or lobe by a lobulated pink, red, or purplish mass which is firm to the touch and bleeds readily. The surface of the tumor is smooth, because as a rule the bronchial mucosa has not ulcerated, though ulceration may develop and squamous metaplasia may occur. An important feature is that some of these tumors resemble an iceberg floating in water, in that the visible portion is much smaller than the portion lying within the lung substance. The usual tumor might be likened to a dumb-bell. It has a small intrabronchial portion joined by a narrow neck of tumor which passes through the cartilaginous rings to the main mass lying in adjacent lung tissue, which is compressed around it. If the adenoma partly or completely blocks the bronchus into which it projects, the lung distal to the obstruction will show pathological changes such as segmental or lobar atelectasis.

Unlike carcinoma of the lung, adenoma occurs much more frequently in women than in men, the incidence in this series being 10:2. The age distribution in adenoma is usually below 40 years and often between 20 and 30. Cough is the most frequent symptom; it may be dry or be accompanied by frothy mucoid sputum. Recurring hemoptysis is also relatively frequent. Other symptoms associated with adenoma arise as a result of obstruction to the bronchus in which the tumor lies. All 12 patients were treated surgically. One tumor was successfully removed through the bronchoscope, but the patient subsequently required lobectomy to remove diseased lung tissue, while 1 tumor was removed by bronchotomy. Three others were adequately dealt with by lobectomy, and 2 required removal of both middle and lower lobes. The remaining 5 required pneumonectomy, but in 2 patients an erroneous diagnosis of oat-cell carcinoma had been made, and lobectomy might have been sufficient. The author believes that in former years patients with bronchial adenoma either died at home under the mistaken diagnosis of unresolved pneumonia or carcinoma, or they died in sanatoriums erroneously given the diagnosis of tuberculosis.

Malignant Anorectal Melanoma. G. Cristiani, S. Sokol and O. Eguía. Prensa méd. argent. 44:494-498 (Feb. 15) 1957 (In Spanish) [Buenos Aires].

Anorectal melanoma is a rare and highly malignant tumor. It develops from the pavement epithelium of the anal canal and involves the rectum. The early symptoms are enlargement of the inguinal lymph nodes, anorectal pain, rectal hemorrhages, and rectal tenesmus. The diagnosis is made by biopsy. The authors observed 2 cases in women 50 and 70 years old, who were cared for in an oncologic clinic. The patients complained of anorectal symptoms of 6 months' and one year's duration, respectively, of great loss of weight, and of a rectal tumor. The inguinal lymph nodes were enlarged. Diagnosis of malignant melanoma was made by biopsy. In the younger patient the operation consisted of abdominoperineal resection of the anal, rectal, and sigmoid segments followed, in 3 weeks, by bilateral dissection of the inguinal lymph nodes. Histological examination of the tumor confirmed the diagnosis. The lymph nodes showed metastases of a malignant melanoma. The patient survived 21 months after the operation, 18 months in fairly good general condition, the last 3 months manifesting deterioration leading to death. In the older patient a roentgen examination revealed metastases in the lung. She was subjected to palliative procedure of a sigmoid colostomy and perineal amputation. Histological study of the removed specimen confirmed the clinical diagnosis. The lymph nodes had metastases of malignant melanoma. The patient survived 5 months. At autopsy, metastases were noted in the lungs, heart, liver, gallbladder, stomach, small intestine, kidneys, adrenal glands, lymph nodes of the lesser and greater curvatures of the stomach, and the intrathoracic lymph nodes.

The Management of Penetrating Wounds of the Inferior Vena Cava. T. E. Starzl, R. K. Broadaway, R. C. Dever and G. B. Reams. Am. Surgeon 23:455-461 (May) 1957 [Baltimore].

Histories are presented of 3 patients who sustained gunshot wounds of the inferior cava and who were successfully treated with suture repair. These represent the 8th, 9th, and 10th cases of missile injury to the inferior cava, with survival, in the literature. Recovery in 1 patient was complicated with external iliac thrombosis. One of the patients had an associated aortic laceration, also sutured. All the patients had additional multiple serious visceral injuries. One of the caval injuries was above the level of the renal veins; this is the second such case in the literature. In these 3 patients, as well as almost all others in the literature, massive bleeding had ceased by the time celiotomy was done. It is quite possible that, with this spontaneous tamponade, no further venous hemorrhage would occur if the retroperitoneal space were not explored. It is, however, not possible for the surgeon to be certain of this, and it is frequently necessary (as in the present series) to carry out such exploration for other retroperitoneal injuries which, if left untreated, would be fatal. Therefore, when the trajectory of a missile projects to or near the great vessels, the authors believe that a program designed to give exposure of the potentially injured vessel should be instituted. There is no need for haste, since recurrence of hemorrhage need not be anticipated until the retroperitoneal dissection is begun. Lighting can be adjusted, vascular instruments obtained, additional assistants summoned, and additional blood crossmatched.

During this period of preparation, manipulation of the hematoma should be avoided because, by probing or manipulating, the surgeon may precipitate a massive hemorrhage at a time when he is ill-prepared to deal with it. For caval injuries at or below the transverse mesocolon, the authors approach the retroperitoneal space by reflection of the small intestine and its mesentery to the right, or by reflection of the ascending colon to the left. The ultimate in exposure is gained by a combination of these maneuvers, reflecting the small intestine, ascending colon, and related mesenteries in a cephalad direction. For injuries above the transverse mesocolon, the hepatic and transverse colon as well as the transverse mesocolon are swept inferiorly. The retropancreatic area can then be entered with wide exposure with the Kocher maneuver. The authors are of the opinion that postoperative anticoagulation therapy is not routinely necessary but should be considered in multiple or unusually severe caval injuries.

Sepsis in Surgical Wounds with Particular Reference to Staphylococcus Aureus. B. K. R. Clarke. Brit. J. Surg. 44:592-596 (May) 1957 [Bristol, England].

Wound infection was studied in 2 general surgical wards over a period of 10 months. The part of the investigation concerned only dry wounds and drained wounds. Suprapubic and colostomy wounds were not considered. Dry wounds can be defined as undrained wounds which normally heal by first intention. They rarely became infected. Drained wounds often became infected. Out of the 382 dry operation wounds investigated, 52 (13.6%) broke down; that is, they healed by secondary intention. These included wounds from operations such as appendectomy and partial gastrectomy involving the opening of unsterile viscera. In 27 (7.1%) the break-down was minimal, but in 25 (6.5%) it was moderate to severe. The most common cause of severe break-down was the bursting of deep abdominal abscesses yielding coliform bacilli. The second most common cause was sepsis due to Micrococcus (Staphylococcus) pyogenes var. aureus. These infections were almost always acquired in the operating room, and half of them were penicillin-sensitive. Minor inflammation in healing dry wounds was commoner 6 to 8 days after operation than at other times; it was commoner in wounds closed with stitches only than in those closed with clips; and it was commoner in wounds heavily infected with M. albus than in those lightly infected or not infected. Strains of penicillin-resistant M. aureus caused as severe lesions as did strains of penicillin-sensitive M. aureus. M. aureus is coagulase-positive, and M. albus is coagulase-negative.

The average length of stay in hospital of patients whose wounds were infected with M. aureus was found to be 5 days longer than the average length of stay of patients whose wounds were not so infected. However, many patients stayed in hospital for more than the usual length of time for reasons not connected with micrococcic infection. These patients, then, owing to their long stay in hospital, acquired M. aureus in their wounds. Again, patients who had had operations which necessitated their staying in hospital for a long time had also the type of wound which often acquired M. aureus. Also, in the ward where fewer wounds became infected with M. aureus it was the custom to send the patients home in the shortest possible time after operation, unlike the custom in the other ward.

NEUROLOGY & PSYCHIATRY

Epidemic of Aseptic Viral Meningitis Associated with Eruption: A New Clinical Entity. J. Valcke and E. Nihoul. Arch. franç. pédiat. 14:553-562 (No 6) 1957 (In French) [Paris].

The authors report on an epidemic of nonbacterial meningitis which occurred in Belgium in the summer of 1956 and which attacked about 3,000 persons. Similar outbreaks were reported from the Netherlands, Germany, Switzerland, Great Britain, and Denmark. The authors studied the clinical course of the disease in 95 children and 19 adults in 58 families. One member was ill in 32 families, and the number of sick members varied from 2 to 9 in the other 26 families. These 114 patients were divided in 4 groups. Forty infants and 11 adults had a pronounced meningeal syndrome associated with an eruption of a character midway between scarlet fever and measles. A mild meningeal syndrome was present in 37 children and 8 adults. Twelve children had a general, infectious, influenza-like syndrome with fever and eruption, and 6 children had a mild syndrome of influenza with vague symptoms of infection and without eruption. Lumbar puncture was performed in 39 children, 35 of whom belonged to the 2 first groups, 3 to the third group, and 1 to the 4th group. The cerebrospinal fluid of patients in the first 2 groups contained a fairly large number of cells, varying from 200 to 2,000 per cubic millimeter. The course of the disease, which was always benign, varied considerably. It did not depend on the therapeutic methods used. Antibiotics were ineffective, and treatment was mostly symptomatic, i. e., antipyretic and analgesic. The usual duration of the disease was 1 week. After a brief drop in temperature, there was a second rise. Many patients seemed to have a recurrence of the disease after an apparent recovery.

Poliomyelitis viruses and Coxsackie viruses were excluded as causative agents. The laboratory diagnosis was established by isolation of the virus from feces and from the cerebrospinal fluid, by crossed serologic (neutralization) tests, and by identification of all the isolated viral strains as enteric cytopathogenic human orphan (ECHO) viruses, type 9. For the first time this virus has been demonstrated as a causative agent in an epidemic. Encephalomyelitic symptoms such as headache, vomiting, pain in the neck, and a large number of cells in the cerebrospinal fluid were observed only in patients in whom this virus was demonstrated.

Influence of Age and Sex on Susceptibility and Clinical Manifestations in Poliomyelitis. L. Weinstein. New England J. Med. 257:47-52 (July 11) 1957 [Boston].

The author studied the importance of age and sex in determining the nature of poliomyelitis in 618 patients with the paralytic form of the disease observed by him from 1950 through 1955. One hundred patients were 5 years old or less; 161 were between 6 and 15 years of age; 213 between 16 and 30; 117 between 31 and 39; and 27 between 40 and 65 years of age. Poliomyelitis was more severe in adults than in children, as indicated by the greater frequency of urinary dysfunction, quadriplegia, respiratory paralysis, and death in persons over the age of 16 years. When monoplegia occurred, the left side was involved more often than the right, especially in adults. There appeared to be a sex predisposition to susceptibility to poliomyelitis; among children, there was a preponderance of males, but in adults, there was a small excess of females. Among children up to 16 years old the male to female sex ratio was 63.2 to 36.8; in 330 adults between 16 and 39 years of age women outnumbered men (53.4 to 46.6). A striking reversal of this trend was noted in persons between 40 and 65; of the 27 patients in this group 20 (74%) were men and 7 (26%) were women.

In adult patients, quadriplegia, respiratory paralysis, and death occurred more frequently in men than in women, despite the greater number of women in this age group. In men over 40 poliomyelitis is most likely to be severe and fatal; next in order of risk is the male 16 to 39 years of age. Because of the high risk of severe, permanent crippling and death, it is just as important to immunize all adults against poliomyelitis as it is to protect all children, despite the lower incidence of the disease in the older age group.

Nonneurological Lesions of Poliomyelitis in the Acute Phase. G. C. Angela and F. Di Nola. Minerva med. 48:2149-2157 (June 20) 1957 (In Italian) [Turin, Italy].

The authors report on a study of the anatomic and pathological nonneurological lesions present in a group of 198 patients with poliomyelitis in the acute phase. Fourteen patients died of bulbar poliomyelitis and 1 of intercurrent bronchopneumonia. Postmortem examination of the 15 patients revealed interstitial lesions and lesions of the bronchioles in 4 patients, bronchopneumonic lesions in 1, mechanical obstructive phenomena in 7, and pulmonary edema in 1. Pulmonary lesions were not present in the other 2 patients. Specific myocarditis due to poliovirus was not found. Examination of the heart showed signs that are frequently found in patients dying of other infectious diseases or of acute asphyxia. One patient presented mild hemorrhagic lesions in the gastric mucosa and in the terminal part of the ileum. Some patients presented skin lesions which were caused mainly by muscle dysfunction. Phenomena of hyperkeratosis and at times of acanthosis with contraction and rupture of the elastic fibers were noted in some patients; these lesions were more marked in the elderly patients. Significant osteoarticular lesions were not observed. The patients were dismissed as soon as they had recovered from the acute phase of the disease, whereas osteoarticular lesions occur at a later stage. Early atrophic phenomena combined with inflammatory infiltrates (lymphocytes and rarely plasmacytes) were observed in the muscular fasciculi at autopsy and at biopsy.

Histopathological Study of Acute Anterior Poliomyelitis: Lesions of the Peripheral and Central Sensory Systems. S. Nicolau, T. Hornetz, R. Dinu and others. Minerva med. 48:2168-2176 (June 20) 1957 (In Italian) [Turin, Italy]

The topography and the extension of the lesions in the sensory neurons of the spinal cord, in the peripheral segments (ganglions and nerves); the alterations of the general sensibility in the various regions of the encephalon, from the bulb to the thalamus and to the cerebral cortex; and the centers of unconscious proprioceptive sensibility in the cerebellum were studied in 52 patients with poliomyelitis and in 4 monkeys that had been infected with poliovirus. All patients presented lesions of the posterior horns; the lesions were more marked at the base of the horns (the region most close to the anterior horns) in half of the patients. Three patients had true lesions only in the posterior horns, while perivasculitis was observed in the anterior horn. Five of 14 patients with lesions in the sensory area presented massive softening of the posterior horns. Involvement of Clarke's column occurred in 5 patients. A study of the medulla by longitudinal serial sections in 3 patients revealed uninterrupted lesions.

Lesions of the spinal ganglions were always present. Cajal cells were found to participate very actively and from the very beginning in the neuronophagic process. Diffused infiltration with lymphocytes and monocytes and connective tissue hyperplasia were observed. Lesions of the roots were pronounced whenever the grey substance was markedly affected. Fairly intensive perivascular infiltrations were observed in some patients. One patient with extensive lesions of the roots presented a discontinuous and segmentary degeneration of the peripheral nerves.

The study of the sensory encephalic connections in 5 patients revealed lesions of the bulb, of the protuberance, and of the peduncle as well as of the cerebellum and of the thalamus in 3 patients. The other 2 patients presented lesions that went beyond the bulb but did not have lesions of the neurons in the parietal region of the cerebral cortex. Observations in 20 patients showed that in 7 patients the spinal ganglionic lesions were as intensive as the lesions of the corresponding posterior horn.

Encephalitis After Varicella. P. Bergsjø. Tidsskr. norske lægefor. 77:518-519 (June 15) 1957 (In Norwegian) [Oslo].

Encephalitis after varicella is believed to occur less often than encephalitis after measles. Adult varicella patients often have headache and pain in the back, which may indicate a slight degree of encephalitis. The recognized cases occur most often in children aged from 4 to 8. The prognosis is more unfavorable in adults. Varicella encephalitis usually sets in from the 3rd to the 8th posteruptive day. Report is given of a case of encephalomyelitis after varicella in a boy aged 7, with onset on the 7th posteruptive day. The boy was in coma for 3 weeks. Two days after one attack of generalized convulsions, treated with barbiturates in large doses, hyperpyrexia and circulatory collapse occurred. The blood pressure returned to normal after administration of norepinephrine in glucose, and the temperature fell after hibernation with cold sheets and ice bags, treatment believed to have been life-saving at this critical stage. Continuous oxygen, penicillin, and streptomycin were given prophylactically, with fluids intravenously. Six weeks after his awakening from the coma the boy shows no signs of psychic changes and there is improvement in the muscular weakness.

GYNECOLOGY & OBSTETRICS

Malignant Vulvar Paget's Disease. J. D. Woodruff and E. H. Richardson Jr. Obst. & Gynec. 10:10-16 (July) 1957 [New York].

The authors report the occurrence of Paget's disease of the vulva with cellular alterations suggesting malignant change in the Paget cells in 2 women aged 64 and 62 years respectively. The illness of the first patient began about 3 years before her admission to hospital with the appearance of a small pimple on the left vulva; there had been marked pruritus associated with the lesion, and the patient had received cortisone and corticotropin (ACTH) both locally and parenterally, with temporary improvement. A relapse was treated unsuccessfully by x-ray therapy. On admission, pelvic examination showed marked redness and edema of the left labium. There were numerous small white islands scattered throughout the brilliant red lesion. The edges were sharply demarcated. The clitoris, right vulva, and left perineum and buttock were involved. A biopsy of the lesion revealed intraepithelial carcinoma, and a total vulvectomy was performed. Microscopic examination of the specimen showed that most of the epithelium was thickened and distorted by masses of large clear cells with pale fine granular cytoplasm; most of the nuclei were pale and only a few were hyperchromatic. Degeneration with vascuolization was prominent. These same cells were seen diffusely throughout the ducts of the sweat glands and also in the root sheaths of the hair follicle. The acini of the apocrine and merocrine glands were infiltrated with individual cells of the type described in the surface epithelium. The microscopic picture thus was that of rather striking individual cell anaplasia with definite involvement of the underlying epithelial structures. In several areas there were masses of these cells obliterating the acini, and forming a definite adenomatous tumor, not unlike the comedocarcinoma of the breast. Five and one-half months later an area in the perineum and buttock to the left of, and below the level of the scar at the fourchette, was excised, and characteristic cells were found in surface and ductile epithelium with marked nuclear variation in size and staining qualities. Six months later a small area to the left of the urethral meatus and another to the right of the fourchette were excised, and the epithelium was again thickened and characteristic cells were quite prominent. The patient remained well, with no local recurrence to date.

The second patient was admitted to hospital because of enlarged left inguinal lymph nodes and a history of eczema of the vulva of 8 years' duration. She presented the typical picture of a malignant tumor of the vulva with massive involvement of inguinal lymph nodes. A radical vulvectomy was performed. The microscopic picture again was that of a rather marked individual cell anaplasia. In many sections, the absence of any underlying tumor was striking, and the only tissue breakdown was in the tumor growth itself. The normal epithelium was distorted, but there was little if any evidence of local destruction such as that seen in most of the malignant tumors. Twelve months later a recurrent tumor in the perineal region was excised with removal of left superficial inguinal and femoral lymph nodes, which showed metastatic tumor. The patient received deep x-ray therapy which was discontinued because of lack of response. Although the patient gradually deteriorated physically as a result of the malignancy, the progress was slow when compared with the usual course of malignant disease. Death occurred 15 months after the vulvectomy, and autopsy revealed squamous-cell carcinoma of the vulva with extension to uterus and tubes and metastases to inguinal and retroperitoneal lymph nodes, skin, peripancreatic tissue, and obstruction of the duodenum secondary to metastatic lesions.

Paget's disease of the vulva is a distinct entity. The clinical picture and the course are usually that of an intraepithelial carcinoma which may involve any of the structures of ectodermal origin, most commonly the apocrine glands, with which there seems to be a definite anatomic association. When malignancy does occur, metastatic spread seems to be slow and involves adjacent areas and regional lymph nodes first. The metastases show clusters of cells which often contain scattered clear cells similar to that seen in the original tumor. Treatment should consist of wide local excision and frequent follow-up biopsies in the local area. Unless macroscopic or microscopic evidence of malignancy is present, no further therapy would seem necessary. In the presence of such evidence, lymphadenectomy would definitely be indicated, since not only does the tumor seem to be slow growing, but also x-ray therapy has been of no value.

Management of Toxemia of Pregnancy with Reserpine: I. Maternal Effects. S. F. Rogers, J. E. Lindley, J. H. Moyer and M. Desmond. Obst. & Gynec. 10:17-27 (July) 1957 [New York].

Of 303 pregnant women with toxemia given reserpine alone and in combination with hydralazine hydorchloride, 95 had severe preeclampsia, 25 had primary hypertensive disease with severe preeclampsia, 169 had mild preeclampsia, and 14 had eclampsia. The patients with mild preeclampsia were given 5 mg. of reserpine intramuscularly or intravenously. This dose was repeated in 1 or 2 hours if the patient was still hypertensive. Thereafter, 5 mg. of the drug was given every 4 to 6 hours intramuscularly, as needed, to maintain a blood pressure of 140/90 mm. Hg or higher. Five to 10 mg. of hydralazine intravenously, either as a single injection or a slow intravenous infusion with 25 mg. of the drug to 100 cc. of 10% dextrose in water, was given only when a normotensive response was not obtained with reserpine alone. Patients with severe preeclampsia were given 10 mg. of reserpine intramuscularly or intravenously, and this dose was repeated in 1 or 2 hours if the patient was still hypertensive. Thereafter, 5 mg. was given every 4 to 6 hours as required to control the hypertension. Hydralazine was given intravenously in doses of 10 to 20 mg. as a single injection for a rapid initial blood pressure fall, if the desired response was not obtained with reserpine. This dose was repeated only when the normotensive state could not be maintained with reserpine alone. A continuous infusion of 40 to 50 mg. of hydralazine to 100 cc. of 10% dextrose in water was administered when the blood pressure was labile or when it was difficult to achieve the desired response. The basic therapy for eclampsia was 10 mg. of reserpine given intravenously and repeated in 1 or 2 hours if the patient was still hypertensive. This was followed with a maintenance dose of 5 to 10 mg. intramuscularly, every 4 to 6 hours, to insure sedation and normotension. Hydralazine, 20 mg. in a single intravenous injection, was also used if the blood pressure was 170/100 mm. Hg or above; if the blood pressure was between 150/90 and 170/100 mm. Hg only 10 mg. of the drug was given. If the blood pressure was lower, it was safer to give the drug more slowly by continuous intravenous drip, using only 35 mg. to 100 cc. of 10% dextrose in water. Supportive measures included administration of oxygen, fluid balance, diuretics, tracheotomy, bed rest, and sedation.

Of the 303 patients, 275 (91%) had a good response and 28 (9%) had a fair response. There was no poor response in the entire group. There was not a single maternal death from toxemia. Profound sedation was noted in 20 patients (6.6%) but was not harmful in any of these. Nasal congestion was observed in 36 patients (11%). Mild hypotension occurred in 3 patients (0.9%), oculogyric crisis in 3 (0.9%), and some tremor in 10 (3.3%). None of these side-effects was considered serious, and none persisted. The use of reserpine and hydralazine for effective, safe blood pressure control makes possible more rapid stabilization of the toxemia. This early stabilization allows earlier delivery in the seriously ill patients. A desirable amount of sedation is obtained as a side-effect of reserpine. The bradycardic effect of reserpine cancels the undesirable tachycardia due to hydralazine. Reserpine may be used more freely without the fear of the drastic fall in blood pressure associated with the use of veratrum and hydralazine. Maternal morbidity and mortality are decreased, and fetal salvage is increased by the use of this method. Reserpine alone, or in combination with hydralazine, offers the most effective, rational approach for control of blood pressure in patients with toxemia of pregnancy.

An Examination of Fertility of Women Following Pregnancy According to Height and Weight. T. McKeown and R. G. Record. Brit. J. Prev. Soc. Med. 11:102-105 (April) 1957 [London].

The incidence of conception within 2 years after delivery of a previous child (20.8%) was used as an index of the fertility of 939 women. Fertility declined with age; the trend in association with parity was U-shaped, incidence of conception being lowest in women who had had 2 previous pregnancies.

The only evidence of association between fertility and weight was a low incidence of conception (11.1%) among the 73 women in the heaviest weight group (170 lb. [77.1 kg.] and over). The observed regression of weight on height was used to divide women into 5 groups according to body build. The data suggest that fertility is somewhat higher among women within 5% of the expected weight for height than in those above or below this level.

Healed Genital Tuberculosis: A New Etiologic Factor in Ectopic Pregnancy. I. Halbrecht. Obst. & Gynec. 10:73-76 (July) 1957 [New York].

Of 100 women who received antibiotic treatment for latent genital tuberculosis, 20 conceived. Fourteen of these had a tubal pregnancy; only 6 had an intrauterine pregnancy and 3 of these ended in a miscarriage. The 3 miscarriages occurred in patients with endometrial tuberculosis, the more advanced form of female genital tuberculosis. Two of these patients were later operated on for tubal pregnancies. Any pregnancy occurring after antibiotic treatment of genital tuberculosis demands watchful supervision, considering the fact that such a pregnancy has, a priori, a 4-to-1 chance to be a tubal pregnancy or to end in miscarriage. This is especially true if the disease has reached the endometrial stage before the antibiotic treatment was started. Antibiotic treatment of genital tuberculosis is to be considered as a new causative factor in tubal pregnancy. Spontaneously healed tubal tuberculosis is probably much more common than is suspected and deserves more consideration as a causative factor in tubal pregnancy. The prevention of ectopic pregnancies resulting from antibiotic treatment of latent genital tuberculosis depends on the early detection of the disease when integral restitution of the tubal functions might still be expected. The only diagnostic means which has made possible detection of latent genital tuberculosis in its earliest stage is culture of the genital secretion and particularly of the menstrual discharge.

Intrafunicular Blood Transfusion for the Reanimation of Newborn Babies with Asphyxial Syncope. M. Marchesoni. Minerva ginec. 9:423-429 (March 31) 1957 (In Italian) [Turin, Italy].

The author describes the method used in reanimation of 2 newborn babies with asphyxial syncope. Absolute apnea occurred in the first baby after 2 or 3 spasmodic inspirations. The heart stopped beating after 3 to 4 minutes of life. Intracardial injection of 0.5 cc. of adrenalin after aspiration of 2 or 3 cc. of blood had no effect. The child showed no signs of life and was thought to be dead. A plastic tube was introduced into the umbilical vein to a distance of 12 to 14 cm. until it reached the ascending vena cava. After the injection of 3 cc. of blood a fast, deep, and almost violent inspiration took place. Respiration and cardiac pulsation became normal after the introduction of 30 cc. of blood. The second baby presented absolute apnea at birth; heartbeats were irregular and few. An infusion of 50 cc. of blood through the umbilical vein was started 2 minutes after birth. The baby showed no signs of respiration during the transfusion, but the pulsations of the heart became more frequent. The first spontaneous inspiration, which was slow and superficial, came 15 minutes after birth. Respiration became almost normal 1 hour after birth Administration of oxygen was continued, but the child did not cry, remained in coma, and died afte 52 hours. The authors think that the success o reanimation by means of blood transfusion through the umbilical cord does not depend on the tim within which it is possible to intervene but on th manner of onset and cause of the asphyxia syndrome.

PEDIATRICS

Outbreak of Aseptic Meningitis (Meningoencephalitis) with Rubelliform Rash: Toronto, 1956. R. A. Laforest, G. A. McNaughton, A. J. Beale and others. Canad. M. A. J. 77:1-4 (July 1) 1957 [Toronto].

A study of 96 cases of aseptic meningitis suggested that 50% of the cases were caused by poliomyelitis, Coxsackie B, or Echo (enteric cytopathogenic human orphan) viruses. An outbreak of aseptic meningitis in 1956 was characterized by the appearance of a maculopapular rubelliform rash. This particular combination of aseptic meningitis and rash had not been observed in that area prior to the epidemic. During the summer of 1956, 115 children, 73 (63.4%) ranging in age from 5 to 9 years of age and none of whom exceeded 15 years of age, were admitted to the Hospital for Sick Children, Toronto, with a diagnosis of aseptic meningitis. A history of biphasic illness was obtained in 42 patients (36%), the main features of the first phase being fever, cold in he head, vomiting, diarrhea, and sore throat. It is of interest that the predominant clinical feature of those patients admitted in July was lethargy, while in those patients admitted in August and September irritability was found to be the prominent clinical feature. The most dramatic clinical manifestation was the appearance of a finely maculopapular rubelliform rash covering the face, trunk, and extremities in 50 patients (43%). No lesions were found in the throat, lymphadenopathy was not a feature, the rash did not scale and healed without complications, and the disorder occurred indiscriminately in those vaccinated or not vaccinated with Salk vaccine. No evidence of paralysis was found in any patient, recovery being for the most part uneventful. Nine strains were isolated from stools and 4 from cerebrospinal fluid, all of which were ether-resistant, produced paralysis in day-old suckling mice, and failed to be neutralized by antiserums to poliomyelitis virus save for Echo virus type 9. Differential diagnosis of this disease entity is hampered by the presence of this rash, as the clinical picture is similar to that found in other disorders, namely, rubella, meningococcemia, brucellosis, leptospirosis, and infectious mononucleosis.

To What Extent Have Antibiotics Influenced the Course of Pulmonary Tuberculosis in Children? F. Piéchaud and A. Morvan. Rev. tuberc., Paris 21:256-261 (March) 1957 (In French) [Paris].

The records of 2 groups of children aged 8 months to 14 years with primary tuberculosis, one treated before 1947, when antibiotics came into use, and the other treated since then with various antibiotics, alone or in combination, were compared to determine the effect of antituberculous drug therapy on the course of the disease. Treatment in the first group, which contained 96 children, consisted of removing them from sources of massive infection and enabling them to live in circumstances in which they were provided with good conditions of hygiene, rest, and diet, under the influence of calcium and vitamins. Seven of the children in this group died and 1 was worse when he left the sanatorium than when he entered it; 11 who had had an average stay of 5 months were unimproved at the time of departure; 25 with an average stay of 10 months were improved; and 52 with an average stay of 21 months were cured. These figures show that the course of the disease was favorable only when the stay in the sanatorium was prolonged to an average of 18 months.

Treatment in the second group, which contained 68 children, began in 1947 with the use of streptomycin alone. The administration of aminosalicylic acid, given orally, was started in the second half of 1950, and 2 years later isoniazid was added. All 3 medicaments were given together at first, but before long streptomycin was reserved for severely affected patients, while the rest were given a combination of isoniazid and aminosalicylic acid. The results obtained in this group as a whole, without reference to the antituberculous drugs used, or the combinations in which they were given, were 39 children cured after an average stay of 24 months; 26 children improved at the time of departure after an average stay of 13 months; and 2 children unchanged as to their radiographic status at the end of 12 months; in addition, 1 child died during an operation. Treatment of 22 children with streptomycin and aminosalicylic acid was followed by improvement in 5 after 16 months and by cure in 17 after 31 months. The period of sanatorium care for 31 children treated with aminosalicylic acid and isoniazid, on the other hand, was slightly shorter: 13 months for 14 who left the sanatorium improved and 18 months for 17 who were cured.

One of the most significant advantages of antibiotic therapy lies in its ability to lessen the occurrence of local complications and to prevent the spread of the disease. Many of the children in the first group had suffered greatly from undernourishment during the second World War, and this may account in part for the fact that complications occurred in 10 and were severe enough to cause death in 7, but even so the difference between this group and the 2nd, in which there was only 1 complication, was striking.

Prolonged antibiotic therapy for patients with primary tuberculosis has been advocated by some authors and opposed by others. The question cannot be decisively answered at present, but the facts at hand seem fully to justify the use of antibiotics (1) in all children less than 3 years of age, in whom tuberculosis is admittedly dangerous; (2) in older children with severe infection first revealed by impairment of their general condition; (3) in all children with choroidal tubercles or gastric washings positive for tubercle bacilli; (4) in children with open lymph-node infection; and (5) in those with an x-ray picture of epituberculosis. Many phthisiologists and pediatricians believe that the manifestations of epituberculosis will disappear spontaneously and that rest in a sanatorium or even at home is all the treatment needed, but it is doubtful whether a complete cure can be obtained in this way, even in the most favorable cases.

Clinical Aspects, Diagnosis and Epidemiology of Herpes Simplex Infections. O. Vivell, W. H. Hitzig and H. J. Cremer. Helvet. paediat. acta 12:127-146 (June) 1957 (In German) [Basel, Switzerland].

The authors discuss present-day concepts on the relationship between the human host and the herpes viruses, calling attention to the extensive studies on herpes antibodies carried out by Burnet and by Dodd and collaborators about 2 decades ago, which indicated that the primary infections with herpes virus are generally latent and become manifest chiefly in the conversion to positive of the serologic reactions. Human subjects seem to be the only reservoir of the herpes virus, but, since the infection is chronic, it is readily disseminated. Exogenous infection seems to play no part in those who have become immune, but despite this immunity to exogenous infections there are recurrent endogenous eruptions of herpes simplex. A diagram illustrates the relationship between the human host and the virus of herpes. The serums of 184 persons of various age groups were studied by means of complement fixation tests for the presence of herpes antibodies, and it was found that in the region (in south Germany) in which these studies were carried out the percentage of persons with such antibodies increased with age.

At the age of 14, antibodies to herpes simplex virus were present in 84% of the persons examined. This shows that, as in case of other virus infections, the primary infection with herpes simplex takes place chiefly during childhood. Complement fixing antibodies are transmitted by the diaplacental route to newborn infants, who thereby acquire a certain passive protection against the dangerous exogenous infection that threaten during the first weeks of life. Primary infections with herpes, if they produce clinical symptoms, usually take a more serious and more prolonged course than do the more frequent and inoffensive recurrences. They are protean in their clinical manifestations; they may appear as aphthous stomatitis, herpetic vulvovaginitis, keratoconjunctivitis, herpetic eczema, inoculation herpes, meningoencephalitis not always recognizable as herpes, and a generally fatal herpes sepsis in the newborn infant. Primary herpes can be differentiated from recurrences by a rise in antibody titer during the convalescence in primary infection as against constant titers in recurrences. Serologic and some virologic studies were carried out on 14 patients with clinical signs of herpes. Three of the patients had recurrent herpes of the lips, 8 had stomatitis, 1 had herpetic eczema, in 1 a finger became inoculated with herpes as the result of sucking in the presence of herpes of the lips, and the meningoencephalitis in a young infant seemed to be of herpetic origin. The importance of the diagnostic studies for the etiological clarification of these disease entities is explained on the basis of detailed case histories.

A Case of Congenital Cancer. D. W. Beckett. East African M. J. 34:143-144 (April) 1957 [Nairobi].

The child reported on was born at home but was brought to the hospital 27 hours later because of a lump on the face. The child appeared to be a well-formed, full-term, living, male, newborn infant. There was a soft tissue tumor rising from the left cheek. This tumor was about the size of a tennis ball. It appeared to be nodulated and was fairly mobile. The covering skin was stretched thinly over it and was bluish-pink in color. The tumor was not pulsating. A provisional diagnosis was made of a congenital cyst, probably dermoid, and the child was kept in hospital for observation. During the next 6 days the infant's condition deteriorated. The tumor increased slightly in size, and the baby had a steadily increasing difficulty in taking its feedings. After 2 days it had to be fed on expressed breast milk with a spoon, and after another 2 days tube feeding was necessary. At operation the tumor was found to be obviously malignant. There was no differentiation at all, and the anatomy of the cheek was so distorted that none of the landmarks could be made out. The tumor appeared to be rising from the maxilla. The mass was removed with extreme difficulty, and at the end it was seen that the facial nerve and vessels had been destroyed. The operation was completed at 4 p. m. and the child died at 5:30 p. m. Permission for autopsy could not be obtained. Examination of the surgical specimen indicated that the tumor was a poorly differentiated neuroblastoma, possibly of the "retinal anlage" type.

First Results in the Therapeutic Use of Promazine in Children with Neuropsychiatric Disturbances. O. Vergani and E. Aldeghi. Minerva pediat. 9:467-470 (April 28) 1957 (In Italian) [Turin, Italy].

Treatment with promazine administered by mouth had a beneficial effect on 23 of 27 children, 5 to 13 years old, with neuropsychiatric disturbances. Twenty-two children were male and 5 female. Most of the children manifested psychomotor instability, irritability, reactivity, and impulsive aggressiveness; 13 had epilepsy. All children had an abnormal electroencephalogram. The average IQ of 18 children to whom it was possible to apply the Binet test was about 75. Each child received a dose of from 50 to 200 mg. of promazine per day (1.4 to 6 mg. per kilogram of body weight). The treatment was continued for more than 3 months in 19 children. The results were very good in 6 children, whose behavior returned to normal; good in 13 children, whose behavior improved to the extent that they could be safely dismissed from the institute; and fair in 4, who were also dismissed from the institute. The drug had no effect on 4 children. The results obtained in the 13 epileptic children were very good in 1, good in 10, and fair in 1; the drug had no effect in 1 child. The drug was well tolerated even when high doses were given. Drowsiness was not observed. The children who were dismissed were able to keep up their attendance in school. The children were again observed 1 month after the end of the treatment; very good results were still present in 4, good results in 7, fair results in 2, and no results in 14. The IQ of the children in whom the drug had very good results went up to 85.

Duodenal Enzymes in Infants with Kwashiorkor or with Dystrophic Condition. G. Russo and P. Buttitta. Minerva pediat. 9:382-392 (April 7) 1957 (In Italian) [Turin, Italy].

The authors report on the values of the duodenal enzymes in 3 groups of infants. The first group was composed of 8 children with domestic Kwashiorkor. The second group was composed of 12 infants with dystrophy; of these, 11 had hepatic steatosis, 5 riboflavin deficiency, 8 hypodysprotinemia, and 5 edema. The third group was composed of 12 normal children used as controls. The enzyme values were low in the duodenal juice of all the children with Kwashiorkor and in some of the children with dystrophy. The values were higher or became normal after the children had recovered from the disease. The authors believe that the pancreatic alteration that accompanies the deficiency of essential nutritive factors does not cause hepatic steatosis.

Changes in the Eyegrounds of Children with Diabetes. E. Heinsius. Deutsche med. Wchnschr. 82:918-919 (June 7) 1957 (In German) [Stuttgart, Germany].

Retinal changes have become frequent in diabetic adults since their life expectancy has increased, but in diabetic children these changes were regarded as rare. The author studied the eyegrounds of children in a camp for diabetic children and found that 17 of 78 had retinal changes, such as punctate hemorrhages, capillary aneurysms, signs of earlier hemorrhages, whitish areas (indicative of capillary blockage) at the posterior pole of the retina, and irregularities in the venules, such as ampulla-like dilatations. Comparing these findings with those observed in older diabetic patients, they seem to be mostly characteristic of the early stages of diabetic retinopathy. In 5 of the children the macular reflex was abolished and pigmentation was somewhat reduced, changes that are observed only in older adults. The diabetic children ranged in age from 9 to 19 years, and in those with eyeground changes the diabetes had existed for from 4 to 8 years, whereas in most of those with normal eyegrounds the diabetes had been present for less than 4 years. On the basis of these observations the author regards it advisable to examine the eyegrounds of diabetic children at intervals of not longer than 4 years, and, if retinal changes are found, suitable treatment should be started at once. In view of the doubtful prognosis of diabetic retinopathy, the family physician or the pediatrician should give advice in selecting the occupation of these children.

Treatment of Toxoplasmosis During Childhood. H. Käser. Helvet. paediat. acta 12:155-178 (June) 1957 (In German) [Basel, Switzerland].

The author presents observations on 5 children with toxoplasmosis, of whom 3 had antenatal and 2 had postnatal infection. Of the 3 children with the congenital form, one 5-month-old girl had signs of psychomotor retardation, hydrocephalus, and extensive, refractory chorioretinitis on the left side. A 10-month-old boy had psychomotor developmental deficiency, epileptiform fits, and bilateral optic atrophy with extensive, more recent chorioretinitis. An 8-year-old boy had increasing character changes, choreiform movements, tremor, and attacks of severe frontal headache with electroencephalographic changes indicative of essential epilepsy. The acquired form of toxoplasmosis manifested itself in a 2-year-old boy as acute encephalitis, and in a 3½-year-old girl it appeared with the signs of a postencephalitic state with severe psychomotor defects and epileptic convulsions. None of the children with toxoplasmosis showed intracerebral calcification.

Of the various drugs that have been tried in the treatment of experimental and of clinical toxoplasmosis, it appears that 2 groups of substances are especially promising. These are the sulfonamides, especially sulfapyrimidine, and pyrimethamine (a derivative of 2:4 diamino-pyrimidine). If these substances are given in combination they exert a synergistic effect. The combination Diazil (sulfamethazine)-Daraprim (pyrimethamine) was used in the 5 children with toxoplasmosis, and a therapeutic effect was observed in all. In 3 patients the Sabin-Feldman serum-dye test, as well as the complement-fixation reaction, became negative; in the other 2 patients the complement-fixation reaction became negative and the serum-dye test became so low that it may be expected to become negative. The clinical status greatly improved in 3 of the children, and in the other 2, except for slight persisting electroencephalographic changes, clinical and serologic cure could be obtained. Thus the efficacy of the combined sulfapyrimidine-pyrimethamine treatment has been proved in human subjects. Optimal dosage and period of treatment have not been definitely established.

DERMATOLOGY

Lichen Sclerosus et Atrophicus with Oral Involvement: Histopathologic Study and Dermabrasive Treatment. R. F. Miller. A. M. A. Arch. Dermat. 76:43-55 (July) 1957 [Chicago].

The findings in 1 patient with bullous lichen sclerosus et atrophicus associated with vulval, perianal, and oral manifestations, are compared with those described in the literature. Lichen sclerosus et atrophicus is a morphologic entity. This has been established and based on a distinctive histopathological picture, most characteristically seen in older lesions. Early papular and macular lesions in the patient reported on have been found to be erythematous or brownish, apparently because of the presence of an infiltrate beneath the epidermis composed of lymphocytes, histiocytes, and fibroblasts. A narrow zone of homogenization was seen early in the disease, and the band-like or massive infiltrate was in apposition to the basal-cell layer. Lichen sclerosus et atrophicus is clearly differentiated from lichen planus by the different character of the early infiltrate and the further course of the histopathological changes. Degeneration, rarefaction, and destruction of elastic fibers are a histopathological feature of lichen sclerosus et atrophicus. Oral mucous membrane lesions with a histopathological appearance compatible with lichen sclerosus et atrophicus appeared to be a manifestation of this disease. Excellent results were obtained with the dermabrasive technique used as a form of therapy.

Lichen Sclerosus et Atrophicus of the Mouth. H. G. Ravitis and A. L. Welsh. A. M. A. Arch. Dermat. 76:56-58 (July) 1957 [Chicago].

Three patients with lichen sclerosus et atrophicus involving the mucous membrane of the mouth are reported on. Lesions confined only to the mouth were found in one of these patients. This is an unusual feature which appears reported for the first time in the literature. Lichen sclerosus and atrophicus is not to be confused with localized scleroderma or lichen planus. The primary lesion of this disease, seen on the mucous membrane, is similar to that seen on the skin. It seems from these reports and other communications that lesions of lichen sclerosus et atrophicus of the mucous membranes of the mouth are not so rare as was formerly thought. In some patients the early lesions of the disease may appear on the oral mucous membranes.

Metastasizing Sweat-Gland Carcinoma: Report of a Case. H. A. Teloh, R. B. Balkin and J. P. Grier. A. M. A. Arch. Dermat. 76:80-86 (July) 1957 [Chicago].

A 55-year-old female with a sweat-gland tumor of the foot of 18 years' duration presented a metastatic lesion to an inguinal lymph node 10 months after the excision of the primary tumor. Three previous admissions were recorded in 1937 and 1938 for paratonsillar abscess, septicemia, abscesses of the right thigh and left ankle, and empyema of the pleural cavity with drainage of the empyema and subsequent tonsillectomy. The patient first noted a small tumor on the plantar surface of the left foot in 1937, after removal of a cast applied for pyogenic arthritis of the left ankle. During the subsequent 18 years the nodule was asymptomatic, gradually increased in size, and was thought to be a lipoma. After a local excision, the major portion of the tumor presented the histologic appearance of a benign tumor of sweat-gland origin. One small area in the histological preparation showed atypical proliferation underlying the cystic epithelial lining with local invasion of the adjacent stroma. In this area there were marked nuclear membranes, clumping of chromatin, prominent nucleoli, nuclear pyknosis, karyorrhexis, and numerous mitoses, all generally accepted changes, sufficient for a histological diagnosis of cancer. The patient was next admitted to hospital in 1956 for a painful recurrent nodule in the scar of the previous excision. The lesion was excised and the pathological diagnosis was epidermal inclusion cyst of skin. No inguinal adenopathy was noted. The final admission occurred 6 months later, because of a slightly tender lump in the left femoral area. The metastatic lymph node lesion showed a picture similar to that of the tumor. It is, therefore, clear that the metastatic focus arose from the area of anaplasia in the primary tumor rather than from the well-differentiated and essentially benign portion making up the bulk of the tumor. The mass was excised and an inguinal lymph node dissection was done. The patient recovered without complications.

The acceptable cases of metastasizing tumors of sweat-gland origin are listed. Metastases to regiona lymph nodes were almost invariably the first manifestation of spread of the tumor and occurred in 18 of 23 cases. In 12 cases the metastatic lesion wa limited to regional lymph nodes. In 48% of the cases dissemination of metastases occurred and caused death.

Pacinian Neurofibroma. P. H. Prose, G. J. Gherard and A. Coblenz. A. M. A. Arch. Dermat. 76:65-6 (July) 1957 [Chicago].

A gradually enlarging, painful dermal growth with superficial ulceration in the heel of a 62-year old man proved to be a Pacinian neurofibroma Examination of histological sections showed no evidence of inflammation to explain the increase in size, since structures resembling immature Pacinian corpuscles were present in the depth of the tumor and others mimicking mature Pacinian corpuscles were seen in the superficial portion of the tumor. It is the author's belief that the tumor was growing in its deeper portion, perhaps by budding, and while the immature corpuscles matured, they enlarged individually and occupied progressively more of the superficial part of the neoplasm. The tumo was excised, along with a wide margin of healthy skin and subcutaneous tissue. The family history and the physical examination of the patient did not reveal any evidence of neurofibromatosis.

Dermatitis Herpetiformis: Relatively Frequent Ski Disease in Norway. B. Langeland. Tidsskr. norsk lægefor. 77:380-381 (May 1) 1957 (In Norwegian [Oslo].

Dermatitis herpetiformis occurs oftener in Norway than in the United States and England, is see oftener in men than in women and most often i the age group between 20 and 60. The disease i chronic, but there is usually a regressive trend. The symptoms are aggravated by drugs containing iodine, by certain foodstuffs (particularly seafish), by mental stress, and by physical strain. For many years sulfapyridine and in more recent years Diasone have been used extensively as the only effective symptomatic agents. Long-continued application of these substances can lead to grave complications, and regular medical control is called for during their use. Of the 90 patients with the disease treated in the dermatological department of the Rikshospital from 1945 to 1950, 85 could be traced. Follow-up study showed that 8 were dead, 13 had recovered, and 64 were still suffering from the disease. The symptoms had shown a regressive trend in 51 cases and had continued unchanged in 13.

UROLOGY

Prostatic Adenocarcinoma (Medullary Type). C. G. Weller. J. Urol. 77:864-870 (June) 1957 [Baltimore].

Soft types of carcinoma of the prostate gland are uncommon. They are of importance chiefly because of the diagnostic difficulties which they present. Young divides the soft carcinomas into 3 types: (1) an infiltrating growth in which the cells, apparently growing faster than usual, collect in masses or separate the connective tissue and muscle fibers so much that no firm stroma is present (a picture which may be called medullary carcinoma); (2) glandular or tubular carcinoma in which the elements are close together, separated only by a minimal amount of stroma; and (3) large areas of intra-acinous proliferation where no stroma is present. The author presents observations on 3 patients with the medullary type of adenocarcinoma of the prostate, in the first of whom it was misdiagnosed preoperatively as benign prostatic hyperplasia. Suprapubic enucleation was attempted, but the tissue was so soft that it was removed with a gallbladder spoon in slightly yellow-white, waxy lobules of low vascularity resembling in consistency fresh pancreatic tissue. The second and third were approached transurethrally and cut like soft cheese with little bleeding.

The author emphasizes that the lesions here reported are variations of one kind of tumor, i. e., adenocarcinoma. This kind of prostatic cancer varies from the commonly encountered hard, nodular, fixed, slowly growing scirrhous type to the almost fluctuant, smooth, fungating medullary type, with all the gradations between these two extremes. The cellular structure of the medullary tumor is much less differentiated and presents a much more malignant microscopic picture than does the scirrhous type. Because of the very rapid proliferation in the medullary tumors, the tendency to formation of fibrous stroma is greatly reduced, causing the extreme softness of this type of adenocarcinoma. Probably because of its lesser degree of cell differentiation, the medullary tumor shows less tendency to elevate serum acid phosphatase levels. Theroetically, its resistance to estrogenic therapy may be due to decreased ability of estrogen to interfere with anaerobic respiration of the less differentiated cells of this type of neoplasm.

The Management of Wilms' Tumor as Determined by National Survey and a Review of the Literature. B. S. Abeshouse. J. Urol. 77:792-811 (June) 1957 [Baltimore].

The conclusions presented by Abeshouse are based on an analysis of the replies of 93 surgeons to a comprehensive questionnaire, an extensive review of the literature, and his own observations on 6 patients with embryoma of the kidney (Wilms' tumor). A study of the results obtained in 777 surgically treated patients revealed a low surgical mortality (2.7%), a high death rate during the first year after the operation (54.3%), and that relatively few patients survived 2 years or longer after the operation. A detailed study of 434 patients treated by 52 surgeons revealed that better results were obtained by preoperative irradiation plus nephrectomy and postoperative irradiation than by nephrectomy and postoperative irradiation, that is, the surgical mortality was 1.5% rather than 2%; the death rate during the first postoperative year was 50% rather than 54.8%; and the 2-year survival rate was 25.8% rather than 15.2%. A study of 212 cases reported in the literature between 1950 and 1955 also showed a somewhat higher 2-year survival rate in those treated by preoperative irradiation, nephrectomy, and postoperative irradiation (31.1% compared with 28%). The best results are obtained when the embryoma of the kidney is recognized during the first year of life.

The following factors are regarded as the advantages of preoperative irradiation: (1) the marked reduction in the size of the tumor renders the operation easier and safer in the moderate-sized tumors and feasible in the large or so-called inoperable tumors; (2) the changes induced by irradiation within the tumor reduce the likelihood of blood loss, tumor spread, metastases, and rupture during the operation; (3) during the course of the irradiation treatment the general condition of the patient may be improved by the use of antibiotics, transfusions, and the administration of fluids intravenously; (4) many urologic surgeons have found that the method reduced the surgical mortality and increased the survival rate. Postoperative irradiation has also gained wide acceptance, but the author warns against the indiscriminate use or irradiation as an adjunct to surgery. Irradiation is not without dangers, particularly when large doses are administered. Damage from radiation may involve the gastrointestinal, hematopoietic, osseous, pulmonary, and renal systems. Radiation nephritis is usually irreversible and may be fatal. Small operable tumors require little or no irradiation. In patients with large tumors adequate doses of irradiation should be given within short periods to reduce the tumor to operable size, and the kidney should be promptly removed. The urologist is best qualified to assume the responsibility for the diagnosis and surgical treatment of embryoma of the kidney.

Intrarenal Aneurysm of the Renal Artery: Case Report. G. I. Smith and V. Erickson. J. Urol. 77:814-820 (June) 1957 [Baltimore].

Only 115 cases of aneurysm of the renal artery had been reported up to 1951, and only 10 that originated in the intrarenal vessels. The authors present the history of a 43-year-old woman who had noted the sudden onset of dull, constant, right flank pain radiating to the right inguinal region and right thigh. This had persisted with some slight dysuria and frequency. She had had no hematuria, nausea, or fever. A similar episode had occurred 1 year previously but had subsided without treatment. The patient gave no history of trauma, passage of calculi, or urinary infection during her 6 normal pregnancies. Intravenous urograms revealed a pressure defect compressing the upper lower calyx with inferior displacement of the lowermost calyx of the right kidney. Retrograde pyelography confirmed the intravenous urographic findings. A translumbar aortogram resulted in immediate filling of a sac-like dilatation of a branch of the renal artery to the lower pole of the right kidney.

A diagnosis of probable intrarenal aneurysm was made and a right nephrectomy was performed through an 11th rib incision. Palpation of the kidney revealed no gross abnormality. When the kidney was halved, a 2.5-cm. cystic-appearing space having a vascular wall was encountered at the juncture of the lower and middle calyces. Since all vascular layers were present in its wall, this was, by definition, a true aneurysm. Because the remaining vascular system appeared normal, this may represent a congenital aneurysm developing at a vascular bifurcation.

The Results of 1,694 Consecutive Simple Perineal Prostatectomies. R. D. Turner and E. Belt. J. Urol. 77:853-863 (June) 1957 [Baltimore].

The authors analyzed data on 1,694 patients who underwent simple perineal prostatectomy between 1930 and 1955. This report is concerned chiefly with the 1,613 patients in whom the microscopic examination revealed benign prostatic hyperplasia, the 81 who were found to have a malignancy of the prostate being omitted from further analysis. The authors preferred the perineal route because they believe that it involves less surgical and postoperative shock, thus permitting the surgeon the freedom to elect total removal if indicated by exploration or biopsy. They prefer a hypobaric spinal anesthetic, remove the Penrose drain within 24 hours, and permit the patient to be ambulatory. Dry heat is applied to the perineum twice daily beginning on the second postoperative day. The catheter is usually removed within 8 days and the patient discharged on the 9th day. Weekly postoperative visits are encouraged during the first 6 postoperative weeks. A total of 129 of the patients (8%) had undergone previous operations on the prostate, mostly transurethral resections. The authors cite data on urethral stricture and contracture of the neck of the bladder before and after the operation; on the incidence of other diseases of the genitourinary tract; on the classification into groups on the basis of the weight of the tissue removed; on incontinence; on sexual impotence; and on complications during and after surgery. The hospital mortality rate was 2.9%.

Simple perineal prostatectomy allows the surgeon an anatomically precise surgical approach. It is complicated by very little morbidity and mortality. It affords patients of the older age groups and those with cardiac defects a procedure involving a minimum amount of shock. This operation requires an average of 45 minutes. It is virtually free of operative and postoperative hemorrhage, a complication that adds to the morbidity in other forms of prostatic surgery. As with all types of surgery, the complications become less with experience. Simple perineal prostatectomy has a definite place in removing adenomas of all sizes and all pathological conditions. This operation has the advantage that it allows the surgeon to procure material for a rapid frozen section from capsular nodules suspected of being malignant. If prostatic cancer is found, the stage is set for total removal.

OTOLARYNGOLOGY

Modern Treatment of Sinusitis. W. T. K. Bryan. A. M. A. Arch. Otolaryng. 65:567-571 (June) 1957 [Chicago].

The sensitivity of the infecting bacteria to antibiotics, the allergic status, and the endocrine function, were studied to establish an accurate diagnosis of the etiological factors in 111 patients with sinusitis. Most of the patients were cured when these factors were attacked simultaneously and when appropriate drainage of blocked or filled sinuses was employed. One patient had polypectomy. All patients were given local medication to relieve congestion. Other medical treatment, given to 11 patients, consisted primarily in antibiotics and allergic management. Vaccines were used for patients with frequent acute infections without detectable defects, in those with prolonged and repeated courses of antibiotics, and in those with bacterial hypersensitivity. Displacement was the reliable treatment of 59 patients during the subacute stage of the disease. Antrum irrigation was indicated for local therapy in 27, and both displacement and antrum irrigation were necessary in 10 patients. The remaining 3 underwent Caldwell-Luc operation. The "wiped nasal smear" offered objective cytological evidence in regard to the nasal mucous membrane.

Facial Rehabilitation Following Radical Parotid-Gland Surgery. J. J. Conley. A. M. A. Arch. Otolaryng. 66:58-66 (July) 1957 [Chicago].

A lack of accurately coordinated knowledge concerning the microscopic classification of parotid tumors and their biology, management and prognosis, and the fear of injury to the facial nerve and the use of inadequate methods of facial rehabilitation are the main deterrents to the successful management of tumors of the parotid gland. The greater majority (70%) of the tumors can be cured without injury to the facial nerve. Of the remaining 30%, which are malignant tumors, the nerve need not be permanently damaged in treatment of this half of the group, leaving approximately 15 to 20% of the cases in which resection is indicated and rehabilitation is necessary. Should the tumor or cyst be confined to or occupy the major portion of the lateral lobe, a partial or total lateral lobectomy, respectively, in indicated. Faradic testing is not an absolute requirement in a partial lateral lobectomy but is used extensively in either total lateral lobectomy or total parotidectomy. Partial and total lateral lobectomy do not leave the patient with the facial nerve weakness due to trauma, stretching, and dissection along the nerve found in those patients who have experienced a total parotidectomy. Faradic testing admits of serious limitations, and only positive responses to such testing are considered, judgment being withheld on negative information until further evidence reveals itself in dissection. Small highly malignant tumors of the adenocarcinoma, squamous-cell carcinoma, mucoepidermoid carcinoma, and malignant mixed tumor types limited to the lateral side and not involving the facial nerve are treated by block dissection of the neck and total parotidectomy without permanent injury to the nerve. Should these highly malignant tumors invade the major portion of the lateral lobe or originate in the middle lobe or isthmus, it is usually impossible to salvage the facial nerve.

Five technical procedures are available to assist in the rehabilitation of the paralyzed face: (1) facial suspension, (2) muscle rotation, (3) facial balance, (4) nerve repair, and (5) nerve grafting. Facial suspension is probably the poorest approach to the problem of any of the techniques because the affected side of the face is completely paralyzed, devoid of all intrinsic muscle activity and appears normal only in an inert way in the position of repose. Muscle rotation (temporalis and masseter muscles) is valuable as an individual procedure and as an auxiliary to the nerve graft procedure. Facial balance is fairly simple, involving resection of 1 cm. of each of the muscle groups responsible for the exaggeration and imbalance of the normal side of the face. Should only the mandibular branch of the facial nerve be involved, facial balance is returned by resection of the same contralateral branch. Nerve repair is simple, direct, and affords the patient the maximum amount of facial rehabilitation in the shortest possible time. Nerve grafting has no appreciable advantage over nerve repair and has the disadvantage of impairing either tongue or shoulder function, and producing an aberrant type of muscle coordination. An active physiotherapeutic program is of inestimable value during the period of nerve regeneration. Galvanic stimulation, active bimanual massage of the cheek, heat, and active movement of the rotated masticatory muscle aid in maintenance of a high degree of muscle tone. Total regeneration of all of the nerve fibers is not necessary to produce good function, as a small percentage of fibers in the main trunk are capable of key connections in the peripheral apparatus.

Further Experience with Antimicrobial Therapy of Laryngeal Tuberculosis. L. J. Wallner. Eye, Ear, Nose & Throat Monthly 36:397-400 (July) 1957 [Chicago].

As a consultant in otolaryngology at 2 large hospitals with 872 and 372 beds, respectively, for tuberculous male patients, the author had the opportunity to study for long intervals a large number of patients with laryngeal tuberculosis. Laryngeal tuberculosis is always secondary to pulmonary tuberculosis, and antimicrobial therapy administered for the pulmonary tuberculosis relieves or cures the laryngeal tuberculosis. Because tubercle bacilli develop resistance to the drugs under certain circumstances, 3 important principles must be followed to obtain optimum results. At least 2 of the antituberculous drugs must be given simultaneously; the drugs should be given continuously, and their administration should not be interrupted throughout the entire period of treatment. The therapy should be continued for many months or even years. The regimen most commonly used consists of 100 mg. of isoniazid 3 times daily and 5 Gm. of aminosalicylic acid sodium 3 times daily, or 100 mg. of isoniazid 3 times daily and 1 Gm. of streptomycin intramuscularly 2 times per week. Viomycin can be given with relative safety in doses of 1 or 2 Gm. intramuscularly 2 times per week.

These potent bacteriostatic agents are capable of ameliorating tuberculous laryngitis to such a degree that the laryngeal disease is no menace to the patient. Pain is completely relieved, the voice is restored, and the pathological alterations heal completely or to a marked degree and remain inactive. The patient's prognosis becomes related to his chest disease alone. Antimicrobial therapy of tuberculous laryngitis is so highly effective that most other measures are unnecessary. This includes complete voice rest, local medication, heliotherapy, cautery, and section of the superior laryngeal nerve. As more patients with tuberculosis are detected earlier and are given long continued chemotherapy, there should be a further decrease in the incidence of laryngeal tuberculosis. In a 12-month period beginning in April, 1955, 17 new cases of tuberculous laryngitis were detected among 2,005 patients newly admitted to the tuberculosis hospital. For comparison, in a 12-month interval in 1948 63 new cases of tuberculosis of the larynx were detected among 1,414 patients admitted to the hospital. Healing of the laryngeal lesions is not dependent on corresponding amelioration of pulmonary tuberculosis or improvement in the patient's physical state. Biopsy studies of prominent laryngeal lesions before the institution of chemotherapy and after antimicrobial therapy confirmed microscopically the healing that was evident on gross examination. The sequence of events seemed to be as follows: disappearance of tubercle bacilli, diminution of inflammation, disappearance of tubercles, and finally replacement of necrotic material by fibrous connective tissue. Healing was not dependent on this fibrous proliferation.

THERAPEUTICS

Clinical Experience with the Therapeutic Effect of a Sulfonamide-Sulfone Combination. A. G. Dettori and G. Salvi. Minerva med. 48:1781-1787 (May 19) 1957 (In Italian) [Turin, Italy].

Forty-two patients with different forms of infection were treated with a sulfonamide-sulfone combination. The drug was prepared by combining sulfomethazine, sulfodiazine, and sulfone N-acetate in a 2:2:1 proportion. The patients received an average dose of 3 Gm. per day, 0.75 Gm. every 6 hours. The drug was administered in cycles of 7 to 10 days. Some patients received a beginning dose of up to 5 Gm. of the drug per day, others were subjected to a prolonged therapy for longer than a month and received an average dose of 2 Gm. per day. The drug was tolerated well by all patients. Untoward side-effects were not noticed. The drug had a very good effect on 19 patients with infections in the respiratory tract. Immediate remission of the symptoms occurred in patients with bronchitis and pneumonia; fever disappeared within 2 to 4 days in patients with parapneumonic pleural effusion; cough was checked markedly; and fever disappeared in patients with bronchiectasic and chronic forms of infection. Total remission of the symptoms and of the fever with diminution and reduction of the abscess cavity was obtained in a 42-year-old man with pulmonary abscess. The drug had a good effect on some patients who had derived little or no benefit from treatment with antibiotics. The drug had a partially beneficial effect on 15 patients with infection in the urinary tract. The subjective symptoms improved, but fever and the pathological urinary condition persisted. Antibiotics had to be used for the complete resolution of the symptoms. The drug had a beneficial effect on some patients with infection in the urinary tract who were operated on. The postoperative period was markedly shortened, and there was no fever. The drug had little or no effect on patients with localized infection (gluteal abscess) and in a patient with extensive thrombophlebitis. The drug, administered in fractioned doses and for a prolonged period of time, had a good effect in the treatment of micrococcic (staphylococcic) infections of patients with rheumatic fever.

Preludin Treatment of Obesity in Diabetes Mellitus: Preliminary Report. R. Robillard. Canad. M. A. J. 76:938-940 (June 1) 1957 [Toronto].

Phenmetrazine (Preludin) hydrochloride was given a double-blind trial in 24 obese patients with diabetes mellitus. Two sets of tablets, which looked and tasted identically and which were distinguished only by the code of letters AZ and BY, were supplied. One set contained the active ingredient phenmetrazine, and the other was a placebo. The clinical investigator and the patients were unaware which tablet contained the active ingredient. As the study progressed, it was found that the BY tablets had no therapeutic effect, while the AZ tablets exerted a therapeutic effect. It was later confirmed that the BY tablets were the placebos.

The action of phenmetrazine then was studied in 51 obese patients between the ages of 16 and 74 years with diabetes mellitus, who were given 25 mg. of the drug 3 times a day, 1 hour before meals, for periods of from 2 to 26 weeks. An average reduction in weight of 1.01 lb. (0.5 kg.) per week was observed. Thirty-one of the 51 patients had had to take insulin, but 5 of the 31 improved to the extent of being able to discontinue taking insulin. Ten of the 31 patients were able to reduce the dose of insulin, and the average reduction was 13.2 units. The average weight loss was 0.8 lb. (36 Gm.). Sixteen of the 31 patients had to continue their treatment of insulin with the same dosage, but in these patients the average loss in weight was only 0.56 lb. (25 Gm.). The withdrawal or reduction in dosage of insulin thus was directly related to the degree of weight loss. While previous attempts at weight reduction with other drugs had failed in these obese patients with diabetes mellitus, they were benefited by phenmetrazine, which proved to be free of toxic effects. It did not aggravate the hypertension frequently observed in diabetic patients of a certain age, and it did not even produce palpitation. Phenmetrazine by its anorexic action will be of great help in the treatment of diabetes mellitus.

First Experiences with a New Malonilurea Derivative with Ganglion-Blocking Effect: 1,3-Bis-(β-trimethylaminoethyl)-5, 5 diethyl-malonilurea. G. Mininni. Sett. med 45:59-62 (Jan. 31) 1957 (In Italian) [Florence, Italy].

The author reports on the results obtained in 128 patients treated with a new malonilurea derivative, C. S. 23, which has a ganglion blocking effect. One hundred patients, 20 normotensive and 80 with hypertension, received fractionated doses of from 5 to 50 mg. active ion of the drug intramuscularly and 30 to 60 mg. by mouth. Twenty-eight patients, 20 with hypertension and 8 normotensive, received a single dose of 30 to 60 mg. of the drug by mouth. Intramuscular administration of a dose of 5 to 45 mg. of the drug always caused a drop of the systolic and diastolic pressures. The best hypotensive effect and the best tolerance were obtained with a dose of from 25 to 30 mg. of the drug. The drop in blood pressure was more marked in patients with essential hypertension. The drug did not have a hypotensive effect in patients with primary or secondary kidney lesions. The drop of the blood pressure was gradual. The lowest reading was obtained 30 minutes after the parenteral administration of the drug. The effect of a dose of 25 to 30 mg. lasted 8 hours. The drug did not cause orthostatic hypotension. The author believes that the drug has its main effect on the orthosympathetic ganglia. Toxic phenomena and disturbances of the central nervous system, of the respiratory system, and of the heart were not noticed. Compared with hexamethonium, C. S. 23 is less habit-forming, is less toxic, and has a longer-lasting hypotensive effect.

Long Term Anticoagulant Therapy. J. H. Olwin and O. Paul. Surg. Gynec. & Obst. 105:61-68 (July) 1957 [Chicago].

The fundamental principle of anticoagulant therapy is a cautious interference with the coagulative mechanism. The more favorable aspects of such interference are prevention of the formation of a thrombus, limitation of its extension once formed, and the recanalizing influence of at least one of the prothrombin depressants. Myocardial infarction as a complication of coronary disease is invariably due to thrombotic occlusion at the site of plaque formation. The fact that gradual mere narrowing of the coronary artery tree without thrombotic occlusion permits compensatory collateral circulation sufficient to provide adequate myocardial oxygenation is sufficient reason to attempt modification of coronary disease to prevent thrombotic coronary arterial occlusion by means of anticoagulants. Only those patients receiving a minimum of 6 months of uninterrupted anticoagulant therapy and having prothrombin levels less than 30% during the total period of treatment were included. No patient received either long-term heparin treatment or 2 long-acting anticoagulants simultaneously. The indications for use of long-term anticoagulants in this series are myocardial infarction, thrombophlebitis, real or threatened retinal vein occlusion, peripheral arterial embolism, peripheral arteriosclerosis, retinal atherosclerosis, cerebral thrombosis, and pulmonary embolism. The contraindications to anticoagulant therapy adhered to are blood disease with bleeding tendencies, severe hepatic disease, and severe renal disease. Factors influencing the control of anticoagulants are the physical status, intelligence, and cooperativeness of the patient; laboratory methods of control; properties and characteristics of the various anticoagulants; other drugs and agents administered during anticoagulant therapy; and the experience of the attending physician with anticoagulant therapy. Bleeding was the most frequent complication in this series, 4 episodes of gross hematuria occurring in 3 patients when the 2-stage prothrombin level was less than 10%. Only 2 of the 70 cases treated had a fatal outcome, and 1 of the fatalities occurred when the patient failed to return for routine prothrombin determination. Since safety is the prime consideration in long-term anticoagulant therapy, there are 2 requirements that must be satisfied: the physician himself must be familiar with the characteristics of complications from and with antidotes to the use of such agents or have proper professional guidance, and, secondly, a laboratory must be available which can perform consistently reliable prothrombin determinations. The risk of hemorrhage accompanying excessive anticoagulant effect is considerably less than that due to failure to maintain adequate depression of prothrombin level.

Anticoagulant Therapy in 521 Patients with Acute Myocardial Infarction. R. Armas Cruz, G. Lobo-Parga, S. Manubens Leiva and others. Rev. méd. Chile 85:49-60 (Feb.) 1957 (In Spanish) [Buenos Aires].

The authors used anticoagulant therapy in 521 patients with acute myocardial infarction, of whom 153 were hospitalized. Thirty-six patients were observed who received no anticoagulants. Treatment was started with heparin. For maintenance treatment the authors used bishydroxycoumarin

(Dicumarol) and phenindione. They preferred bishydroxycoumarin to phenindione because of its easier administration and better response. Phenindione may cause agranulocytosis. The ratio of males to females with acute myocardial infarction was 2.4 to 1. The mortality rate was 7.5% (39 deaths), and thromboembolism occurred in 2.3% of the patients. Mortality was higher among the patients not treated with anticoagulants. The preceding data do not include deaths which occurred within 48 hours after the beginning of the therapy, because the effect of bishydroxycoumarin is evident only after 48 to 72 hours. Hemorrhagic and other complications of this therapy were rare. Hemorrhage occurred in 28 patients (24 minor, 4 serious). The various types of hemorrhage, in order of importance, were ecchymoses, hemorrhoidal bleeding, and gingival bleeding. The authors recommend anticoagulant maintenance treatment for prevention of new coronary thrombosis and for treatment of repeated severe infarctions and persistent angina. This therapy requires the cooperation of the patient and his family.

Treatment of Radiation Lesions with Pancreatic Enzymes. A. Bacchi and A. Volta. Rass. clin. terap. 56:107-117 (April-May-June) 1957 (In Italian) [Rome].

Treatment with proteolytic enzymes of pancreatic origin was beneficial in 4 patients with various radiologic lesions. The exudate was diminished and assumed a pinkish color, indicating a reactivation of circulation. One topical application was sufficient to obtain fast healing in 1 patient with an extensive recent lesion. The enzymes have a direct effect on the cicatrization process; best effects are obtained with an early treatment. Local improvement had a good effect on the general condition of one patient with a very severe lesion. The enzymes were administered intramuscularly in this patient. Improvement of the trophism of the periulcerous tissues, a progressive detergent effect on the focus, elimination of the necrotic parts, and a marked stimulation of the tissues of the healing process were observed. The lytic effect of the enzymes did not diminish in patients subjected to prolonged treatment.

Choice of Antibiotics for Treatment of Infections of Strictly Anaerobic Bacteria. E. de Lavergne, J. C. Burdin and J. Schmitt. Presse Méd. 65:1054-1055 (June 5) 1957 (In French) [Paris].

The effects of antibiotics on strictly anaerobic bacteria are much less known than those on aerobic bacteria. For a long time, treatment of infections by anaerobic bacteria, except those of tetanus and botulism, was based on serum therapy. The advent of sulfonamides improved the results. The effect of sulfonamides is uncertain in infections due to strictly anaerobic bacteria. Penicillin has a powerful effect in infections caused by anaerobic bacteria. Streptomycin and neomycin have only a mild effect. There is a stronger effect with the tetracyclines and chloromycetin. There is very little knowledge as to the effect of Framycetin and Spiramycin. The authors studied the effect of 11 antibiotics on 17 species of strictly anaerobic bacteria. They suggest that penicillin be given in combination with chloromycetin or tetracycline in the early stage of the infection. At a later stage, when the laboratory has isolated and identified the various strains and determined their antibiograms, the clinician may adhere to his former choice or modify it by resorting to other antibiotics, such as erythromycin or Spiramycin, both of which are effective in infections with gram-positive bacteria. Streptomycin, neomycin, and Framycetin have little if any effect on infections by strictly anaerobic bacteria.

Gastrointestinal Side-effects Related to Prednisone and Prednisolone. J. R. Dordick, S. L. Felder, F. Polansky and A. Geffen. New York J. Med. 57:2049-2054 (June 15) 1957 [New York].

Predisone and prednisolone have been established as effective antirheumatic and anti-inflammatory agents in a variety of diseases. Administration of these hormones in therapeutic doses is not usually associated with significant alterations in electrolyte and water metabolism, in contradistinction to administration of cortisone, hydrocortisone, and fluorohydrocortisone. Patients selected for this study were questioned as to whether they had experienced any gastrointestinal symptoms such as abdominal pain or discomfort, pyrosis, bloating, regurgitation, nausea, vomiting, diarrhea, or bloody or tarry stools. Definitive radiologic diagnosis of ulcer was based on the finding of a crater and/or constant deformity. Undesirable gastrointestinal side-effects were present in 35 patients (17.9%). Therapy was successful in 30 of these patients (15.3%) despite these side-effects, but medication had to be discontinued in 5 (2.5%). The presence of an active ulcer suspected clinically and particularly if confirmed radiologically is a contraindication to the use of these drugs. The presence of a chronic ulcer represents an unpredictable hazard, since activation, bleeding, or perforation may abruptly intervene in patients receiving prednisone or prednisolone without premonitory or clinical symptoms of an ulcer.

Myasthenic Crisis: Therapeutic Use of d-Tubocurarine. H. C. Churchill-Davidson and A. T. Richardson. Lancet 1:1221-1224 (June 15) 1957 [London].

The authors present the history of a 56-year-old woman with myasthenia gravis who had undergone thymectomy and who gradually responded less and less to neostigmine. Various anticholinesterases were tried, but the patient finally collapsed, apparently from excessive drug therapy. Complete withdrawal of all neostigmine-like drugs for 7 days led, on resumption of therapy, to much improvement. This, however, was maintained for only a few days before severe myasthenia again became evident. Large doses of d-tubocurarine, which provided complete rest for the motor end-plates, led to a dramatic improvement, which was sustained with the aid of reduced neostigmine therapy for nearly 3 months.

Discussing the implications underlying this form of treatment the authors point out that the action of neostigmine at the motor end-plate has not been fully established. Its therapeutic value in myasthenia is generally attributed largely to its anticholinesterase properties, but this may not be the sole reason for it. The variability in response to neostigmine, not only in different patients but also in the same patient at different times, is characteristic of the disease. The altered response of the motor end-plates might be explained by an alteration in the ratio of acetylcholine molecules to those of choline, the former producing depolarization during their fleeting life-span and the latter persisting indefinitely and producing a nondepolarization block like that of d-tubocurarine. This may help to explain why myasthenic muscle which ceases to respond to neostigmine can be made to respond again if the neostigmine is withheld for a while. The present case illustrates this point.

The fact that the periods of rest were followed by improvement in the response to anticholinesterase therapy led to the next logical step—an even more efficient method of resting the motor end-plates. The authors assumed that the presence of a high concentration of a muscle relaxant, e. g., d-tubocurarine, would so raise the excitation threshold of the motor end-plate that the concentration of acetylcholine ions would be insufficient to cause stimulation. Thus the motor end-plate would enjoy a period of complete rest. This hypothesis was the basis for trying what might otherwise be described as dangerous treatment, namely, the giving of large doses of d-tubocurarine to a myasthenic patient. The results justified the attempt.

PATHOLOGY

Multiple Endocrine Tumors and Peptic Ulcer. E. R. Fisher and R. H. Flandreau. Gastroenterology 32:1075-1094 (June) 1957 [Baltimore].

A patient with multiple ulcers of the duodenum and jejunum associated with hyperplasia of the parathyroids, adrenal cortices, amphophils and basophils of the anterior pituitary, and alpha cell tumors of the islets of Langerhans and heterotopic pancreatic tissues is presented. The initial symptoms were referable to hyperparathyroidism rather than to ulcer. The demonstration of glucagon or a biologically similar material in the serum indicated that the pancreatic tumors were functioning. The etiology of the peptic ulcers in patients with multiple endocrine neoplasms has not been adequately explained. The secretion of glucagon from the alpha cell tumors of the pancreatic islets may have a causal effect in the ulceration in such patients, since removal of such neoplasms has been followed by clinical remission. There is, however, little experimental evidence to indicate that glucagon possesses a direct ulcerogenic effect. It cannot be stated with certainty that the adrenal cortical hyperplasia and adenomas observed in this syndrome are the result of the secretion of glucagon. There is pathological evidence that the pituitary may play a role in the pathogenesis of these adrenal and other endocrine changes. Also the ulcerogenic effect of adrenocorticosteroid secretion merits consideration as a possible pathogenic factor of such lesions in this syndrome. There appears to be a more than fortuitous association between hyperparathyroidism and peptic ulcer. It was found that 24% of patients with hyperparathyroidism at the Mayo clinic had a peptic ulcer, and in some of these patients the ulcers were located in the jejunum. The exact mechanism of ulcer formation in patients with hyperparathyroidism has not been elucidated. Significant clinical and some experimental evidence appears to indicate that the peptic ulcers encountered in patients with multiple endocrine neoplasms may have a complex etiology involving parathyroid and adrenal cortical secretions, as well as perhaps an indirect effect resulting from the secretion of glucagon from islet cell tumors of the alpha cell type. The role of amphophilic hyperplasia of the anterior pituitary in the pathogenesis of multiple endocrine tumors encountered in patients with this syndrome is pointed out. It merits consideration that the hyperplasia might result from a deficiency of a target organ, such as testicular atrophy, as noted in the presented patient.

Multiple Gastric Cancers: Review of the Literature and Study of 42 Cases. C. G. Moertel, A. Bargen and E. H. Soule. Gastroenterology. 32:1095-1103 (June) 1957 [Baltimore].

The pathological findings in 1,835 patients with gastric cancer diagnosed at the time of gastrectomy or from autopsy specimens in a 10-year period were reviewed. A total of 40 patients (2.2%) with tumors of unequivocal malignancy were confirmed as having multiple simultaneous gastric cancers. These were 34 men and 6 women; the lesions were verified at gastrectomy in 37 and at autopsy in 3. The average age at diagnosis in the men was 62 years, in the women 54 years; the range of age was from 40 to 81 years. Multiple adenocarcinomas were found in 38 patients. Of these, 29 had 2 lesions and 9 had 3 lesions; 26 of these patients had tumors of different grades of malignancy and 12 had tumors of the same grade. In addition to these patients, one patient had 2 independent leiomyosarcomas and another had simultaneous adenocarcinoma and leiomyosarcoma. Three of the patients also had pernicious anemia and 4 had associated gastric polyposis. Two additional patients were proved to have one or more malignant neoplasms entirely independent of their multiple gastric lesions. One patient had a squamous cell carcinoma of the nasopharynx, 4 years after gastrectomy for multiple adenocarcinomas. The other had a preceding carcinoma of the sigmoid and a simultaneous hypernephroma of the kidney. The fact that 2.2% of the gastric cancers in this series were grossly multicentric and that 22% in another series were microscopically multicentric appears to give ample evidence for the assumption that a significant proportion of gastric carcinomas would present multicentric zones of malignant change at some stage in their development.

The Syndrome of the Metastasizing Pancreatic Adenoma with Exocrine Secretion. M. Schmid. Ztschr. klin. Med. 154:439-455 (No. 5) 1957 (In German) [Berlin].

Secreting tumors of the exocrine tissues of the pancreas are rare, but they produce a typical syndrome, which is characterized by the triad of polyarthritis, panniculitis (of the Weber-Christian type), and blood eosinophilia. The pathological process underlying this syndrome is a metastasizing exocrine pancreatic adenoma, which, because of its structure, has been referred to as acinous-cell carcinoma. The author cites the history of a 71-year-old man who presented all the characteristic clinical and pathological aspects of the pancreatic adenoma with exocrine secretion. The tumor had a distinct structural and cellular picture, which, with its acinus structure, recalled the exocrine tissue of the pancreas, but differed from it by the absence of centroacinar cells and of excretory ducts. The malignant character was evident chiefly in the formation of distant metastases and in the occasional accumulation of atypical mitoses. For this reason and in analogy to the metastasizing adenoma of the thyroid the author prefers the term metastasizing exocrine adenoma of the pancreas. Metastases generally spread by way of the blood stream into the liver and, in some cases, selectively into the large fat depots: the subcutaneous tissues, the para-articular fat tissues, and into the fat marrow of the long bones.

The tumor tissue secretes lipase and in this way produces extensive necroses in the fat tissues. These necroses develop either by the humoral route by passage of lipase into the blood and lymph channels from the primary tumor or the liver metastasis, or locally by lipase secretion from the tumor metastasizing in the fatty tissue. In the case presented it was possible to prove the secretion of lipases by the tumor tissue. The necroses in the fat tissues were produced by secreting metastases in the subcutaneous tissue in the para-articular fat tissue and in the fat marrow of the long tubular bones.

Genetic, Developmental and Hormonal Aspects of Gonadal Dysgenesis and Sex Inversion in Man. E. Witschi, W. O. Nelson and S. J. Segal. J. Clin. Endocrinol. 17:737-753 (June) 1957 [Springfield, Ill.].

Studies on the causation of sex abnormalities involving sex inversions in man led the authors to recognize 3 definite classes, differing in causation, time of onset of manifestation in ontogenesis, and characteristic type of adult expression. Class 1 abnormalities originate from primary dysgenesis of the primordial germ cells—itself a consequence of damage to egg or free blastocyst (blastophthoria). In the case of complete disappearance of primordial goniums preceding the period of gonadal sex differentiation, genetic males become pseudofemales. If the number of goniums is only substantially reduced, genetic females develop into either pseudomales or true hermaphrodites. Class 2 abnormalities depend on a hereditary peculiarity of mothers, i. e., some agent which passes from the mother to the fetus counteracts the normal medullary functions of the fetal testes immediately following their embryonic differentiation. Hence, genetically male fetuses develop into male pseudohermaphrodites. Class 3 abnormalities develop as a sequel to adrenal hyperplasia, with production of androgenic hormones. Manifestation begins only in the 5th month or later. Genetically female individuals develop into female pseudohermaphrodites.

Sex Chromatin Pattern in Seminiferous Tubule Dysgenesis and Other Testicular Disorders: Relationship to True Hermaphrodism and to Klinefelter's Syndrome, with a Review of Gonadal Ontogenesis. M. M. Grumbach, W. A. Blanc and E. T. Engle. J. Clin. Endocrinol. 17:703-736 (June) 1957 [Springfield, Ill.].

The chromosomal sex pattern was determined in 65 phenotypic male patients with testicular disorders who presented with either sterility, eunuchoidism, cryptorchidism, atrophic testes, or signs of Klinefelter's syndrome. Testicular biopsy specimens were obtained from all but 1 patient. Among these 65 patients, 9 with tubular fibrosis or germinal aplasia of the testis were found to have a female chromatin pattern. In these patients the chromosomal sex and the testicular histopathological structure indicated a gonadal disorder of a congenital nature for which the term "seminiferous tubule dysgenesis" has been proposed by the authors. A group of 23 chromosomal males with similar pathological and clinical findings have also been included in this category. Klinefelter's syndrome was a manifestation of this condition in some patients; however, not all patients with Klinefelter's syndrome had seminiferous tubule dysgenesis. The disorder was familial in 2 patients. One patient had myotonia dystrophica.

Present knowledge of gonadal ontogenesis in vertebrates was reviewed, particularly in placental mammals. In the light of animal experiments, the failure of the embryonic gonad to differentiate as an ovary in chromosomal females with seminiferous tubule dysgenesis has been attributed to a severe corticomedullary imbalance with complete suppression of the cortical component (ovarian primordium). As a result, the embryonic gonad is transformed into a testis capable of bringing about male sex differentiation. The evidence, though inconclusive, suggests that seminiferous tubule dysgenesis is a genetically determined disorder. Seminiferous tubule dysgenesis in chromosomal females appears to be the first example of complete sex reversal in the human. According to the concept presented, these persons may be regarded as a variant of classic true hermaphroditism because of the discrepancy between chromosomal and gonadal sex and in view of the mechanism of gonadal inversion. A concept of true hermaphroditism is proposed based on varying degrees of corticomedullary imbalance of the embryonic gonad.

Cytological diagnosis of sex should become a routine part of the study of testicular histopathology. Detection of a female chromatin pattern in phenotypic males is presumptive evidence of seminiferous tubule dysgenesis, provided true hermaphroditism and rare forms of female pseudohermaphrodism can be excluded. A male chromatin pattern in patients with primary testicular disorders does not rule out the diagnosis; in these patients it must be based on the testicular pathological picture. Determination of the cytological sex of boys with unusually small or firm testes, with cryptorchidism (unilateral or bilateral), or with adolescent gynecomastia should lead to the discovery of prepuberal cases and provide the opportunity to study the testicular lesion in this disorder at an early age.

RADIOLOGY

Idiopathic Hypercalcemia. J. A. Shiers, E. B. D. Neuhauser and J. R. Bowman. Am. J. Roentgenol. 78:19-29 (July) 1957 [Springfield, Ill.].

The authors describe 4 cases of idiopathic hypercalcemia in 2 boys aged 2½ and 2 years and in 2 girls aged 17 months and 4 years and 8 months, the latter of these 2 also being a cretin. The first patient died of uremia, and autopsy was refused. The other 3 are living. The clinical features of idiopathic hypercalcemia may be attributed to the raised serum calcium level, to changes in organs damaged by prolonged hypercalcemia, and probably to associated abnormalities. The typical "elfin" facies, the muscular weakness, anorexia, vomiting, constipation, and failure to thrive associated with mental retardation and deterioration may suggest the diagnosis. The roentgen features of widespread osteosclerosis, evidence of defective bone formation, and abnormal soft tissue calcifications may be characteristic and should not be confused with those of any other entity. Amorphous increase in density of the skull and epiphyses, transverse bands of increased density at the ends of the bones, faulty tubulation, and deposit of calcium particularly in the kidneys distinguish this condition from other metabolic diseases. The causation is unknown, but the most likely cause is considered to be hypersensitivity to vitamin D.

The Familial Occurrence of Pulmonary Alveolar Microlithiasis. M. C. Sosman, G. D. Dodd, W. D. Jones and G. U. Pillmore. Am. J. Roentgenol. 77:947-1012 (June) 1957 [Springfield, Ill.].

While in charge of the radiologic section of the Boston induction board, one of the authors saw a chest roentgenogram of a 45-year-old man showing both lungs filled by a fine sand-like mottling, resembling a snowstorm. There was no similarity to miliary tuberculosis or to any of the so-called miliary conditions previously seen and nothing to suggest either healed fungus infection or silicosis. The patient was free from symptoms, gave no history of occupational exposure, and showed completely normal responses to physical examination of his heart and lungs. This peculiar appearance in his chest roentgenograms had been known for about 5 years preceding 1942, but no one could make a definitive diagnosis or suggest a better name than the descriptive one of "pulmonary calcinosis." After several years of a completely symptom-free period, this patient gradually became dyspneic on exertion and eventually died following extreme pulmonary disability. The authors demonstrate in an extensive review that the condition is not as rare as it has been thought to be. It has also been designated as pulmonary alveolar microlithiasis. They found 21 cases reported in the literature, and they personally know of 25 or more unpublished cases, of which 23 are presented in this paper.

The etiology is unknown, but the high incidence of familial occurrence strongly suggest a hereditary factor. Thirteen of the 23 new patients were members of 5 families. The condition could be due to an inborn error of respiratory metabolism at the alveolar interface, possibly an enzyme fault. Calcium salts are more soluble in acid mediums and are more easily precipitated from alkaline solutions. Anything which promotes alkalinity at the alveolar interface where oxygen and carbon dioxide are exchanged would promote the deposition or precipitation of calcium phosphate or carbonate. However, the problem of calcium deposition in tissues is not germane to the problem, as the deposit is not in tissue but in an exudate or transudate in an otherwise presumably normal alveolus. Injuries to the alveolar walls could cause the exudate, but the real problem, still to be solved, is what causes the deposit of calcium phosphate and carbonate in the exudate. Another suggestion is that the formation of the microlith is due to an abnormality of carbonic anhydrase, which plays an important part in the exchange of oxygen and carbon dioxide and probably also in maintaining normal balances between the extremes of acidity and alkalinity. The enzyme could be deficient, in excess, or abnormal in function. Given an exudate in the alveoli which under normal conditions would be absorbed, the presence of some organic material normally found only in calcifying tissues or ossifying bone might lead to calcium precipitates. The disease usually is asymptomatic for years. It is generally discovered by chest roentgenography. Overexposed or overpenetrated films are necessary to demonstrate the fine sand-like particles spread uniformly throughout both lungs, sometimes accentuated along the pleural surfaces, but not conglomerate or coalescent. The density of the millions of microliths is frequently sufficient to obscure the outlines of the heart and the diaphragm.

X-ray Visualization of the Intervertebral Disk. R. E. Wise, W. J. Gardner and R. B. Hosier. New England J. Med. 257:6-10 (July 4) 1957 [Boston].

One hundred sixty-five patients are reported on, in whom 339 disks were injected. Of these patients 68 were operated on, with exploration of 107 disks. Disk protrusions were found in 55 patients at operation, and sciatic pain was produced by the injection in 38. Three basic diskographic patterns have been observed. The first, which is considered the normal pattern, is that in which a bilocular collection of dye is seen in both the anteroposterior and lateral views. The second pattern is the degenerative type, in which the contrast medium is spread throughout the confines of the disk in a flattened, disorganized manner. There is an associated narrowing of the interspace. The third pattern is that in which a protrusion is present in association with a tear or rupture of the annulus and the posterior spinal ligament; the pattern is usually of the degenerative type. There is no sharp line of demarcation between the simple degenerative disk and that with protrusion. It is apparently a matter of degree, with progression from degeneration without protrusion to progressively increasing protrusion until nerve-root pressure is produced and the classic clinical picture of a protruded disk is attained. Diskography has its advantages when compared with myelography. Iodopyracet is nontoxic and rapidly absorbed and obviates the necessity of removal, as is necessary with iophendylate. The occurrence of radiculitis and arachnoiditis, occasionally seen with myelography, is avoided. With diskography the disk itself is visualized, as opposed to myelography, which gives only indirect evidence. Myelography possesses the advantage of permitting a search for spinal cord or cauda equina tumors in addition to the search for disk protrusion. The diskogram is indicated in cases in which the myelogram is considered normal but symptoms remain suggestive of disk disease.

Calcification in Solitary Nodules of the Lung. M. E. O'Keefe, C. A. Good and J. R. McDonald. Am. J. Roentgenol. 77:1023-1033 (June) 1957 [Springfield, Ill.].

The discovery of a solitary circumscribed nodular lesion in the lung, the so-called coin lesion, immediately raises the questions of its pathological nature. What diagnostic procedures should be carried out? How reliable are they? Should exploratory thoracotomy be done in all cases so that miscroscopic examination of the tissue can be made? A study of solitary nodular lesions removed surgically at the Mayo Clinic from 1940 to 1951 was made by Good, Hood, and McDonald. They concluded that a reliable sign of benignancy was the demonstration of calcification by roentgenologic study. The studies described here were undertaken to determine whether calcification may be present in a greater percentage of the solitary nodular lesions of the lung than has been detected on the usual preoperative stereoscopic and lateral roentgenograms and to learn whether special studies, as by laminography, would increase the incidence of detection of calcification in these lesions. In 149 of the 156 cases reported by Good, Hood, and McDonald, pathological specimens were available for further study. To this number the authors added 58 additional specimens from patients in whom pulmonary operations were performed at the Mayo Clinic for an isolated solitary nodule or circumscribed mass. Thus a total of 207 cases were available for this study together with the preoperative roentgenograms of the thorax.

Some 49.6% of the benign and 13.9% of the malignant lesions showed calcification by roentgenologic examination of the specimen. This study indicates that calcification is present and can be demonstrated by roentgenologic means in a greater number of cases than had been detected by the preoperative use of stereoscopic posteroanterior and lateral roentgenograms alone. The finding of calcium within these lesions does not, except for those showing the characteristic laminated and popcorn type of calcification, indicate that these lesions are benign. The fact that the granulomas which had a laminated appearance roentgenologically did not contain viable organisms seems to be a significant finding. The mere presence of calcium in roentgenograms of a lesion, unless of the laminated type, does not mean that the lesion is inactive bacteriologically. The number of laminagraphic examinations in cases in which pathological material was available was too small to evaluate this procedure as a diagnostic aid, but evidence indicates that it may often show calcification to be present that is not evident on the stereoscopic posteroanterior and lateral roentgenograms of the thorax. It is concluded from this study that a solitary circumscribed nodular lesion can be safely called "benign," from a roentgenologic standpoint, only if the laminated or popcorn type of calcification is clearly demonstrated.

Roentgenographic Recognition and Differentiation of Parosteal Osteogenic Sarcoma. G. M. Stevens, D. G. Pugh and D. C. Dahlin. Am. J. Roentgenol. 78:1-12 (July) 1957 [Springfield, Ill.].

The authors report the occurrence of parosteal osteogenic sarcoma in 19 of 2,300 patients with primary tumors of bone seen at the Mayo Clinic up to May, 1956. Parosteal osteogenic sarcoma is an unusual type of primary, malignant, densely ossified tumor of bone that arises and proliferates from a juxtacortical position, thus providing a typical roentgenographic appearance, on which particular emphasis has been placed. The main distinguishing roentgenographic characteristics are the encircling, dense, lobular, and juxtacortical nature of growth, the failure of the lesion to destroy the cortex, the heterogeneity of ossification, and the failure to produce periosteal elevation. The presence of a thin free space between tumor and cortex is often seen with the proper degree of obliquity of the view. The tumors in 16 of the 19 patients involved the femur, and the distal part of the femur was the site in all but 2 of these.

The latest clinical follow-up on these 19 patients with parosteal osteogenic sarcoma revealed that 1 patient apparently was cured by local excision. Four patients had primary amputation and were alive and well, although 3 have had follow-ups of less than 5 years. Eight patients are living and well after one or more local excisions by amputation. Six patients were dead after local excisions and amputations. Recurrence of the tumor after local excision is almost universal, which is similar to the seeding problem observed in chondrosarcoma. The tumor usually re-forms in the image of the primary lesion.

The differential diagnosis of roentgenographically similar lesions includes consideration of such entities as myositis ossificans, osteochondroma, parosteal ivory osteoma, sclerosing osteogenic sarcoma, ossifying hematoma, and exuberant callus. Careful correlation of the history, roentgenographic features, and pathological characteristics is the best method of diagnosis. However, when pathological confirmation is lacking, the roentgenographic features in typical advanced cases are considered to be reliable enough to warrant serious consideration of amputation on roentgenographic appearance alone. If reasonable doubt as to the diagnosis exists and if the roentgenographic appearance is atypical, local excision might be attempted, to be followed by amputation if and when the first sign of recurrence is noted.

Ochronosis. M. M. Thompson Jr. Am. J. Roentgenol. 78:46-53 (July) 1957 [Springfield, Ill.].

The author reports on a 63-year-old man with ochronosis due to alkaptonuria, a rare disease with severe, generalized arthritis, discoloration of cartilages within the body, and pigmentation of the eyes, the skin over the bony prominences, and the intima of the large vessels by deposition of ochre-colored granules. The urine voided by the patient was dark and turned black on standing in sunlight. The roentgenologic findings in the spine were those of osteoporosis and an accentuation of the normal kyphosis of the dorsal spine. There was ankylosis of the articular facets and the vertebral bodies of the lumbar and dorsal vertebrae. There was calcification of the intervertebral disks, most pronounced in the lumbar vertebrae. Advanced osteoarthritic changes were present in both hip joints with almost complete obliteration of the joint spaces and marked sclerosis of the femoral heads and the acetabulums. The superior portion of the head of the right femur was absent, and the remaining portion of the femoral head was markedly increased in density. The symphysis pubis was fused. The sacroiliac joints were almost fused, and there were extensive flocculent calcifications inferior and lateral to each ischial tuberosity. Examination of the knees showed very extensive osteoarthritic changes with marked narrowing of the joint spaces and advanced bony proliferation. The hands showed varying degrees of narrowing of the joint spaces of the phalanges and metacarpals, and there were many small cystic areas in the proximal phalanges adjacent to the proximal articular surfaces. There was extensive calcification of the cartilages of both ears. These roentgen findings confirmed those reported by Pomeranz and co-workers in 30 patients with ochronosis in the United States. Follow-up roentgenograms showed marked progression of the disease.

While almost all the cases of ochronosis are due to alkaptonuria, ochronosis also may occur after the external use of phenol and may be associated with the excretion of melanin in the urine. Alkaptonuria is a rare systemic disorder characterized by the presence of alkaptone or homogentisic acid in the urine caused by an inborn error in metabolism of tyrosine and phenylalamine. These substances are only broken down as far as homogentisic acid, which accumulates in the blood and is excreted in the urine. Ochronosis appears at about an average age of 50 years, and the sexes are approximately equally affected. The disease lasts throughout the life of the patient. There is a definite hereditary tendency, and the incidence of alkaptonuria has been reported on the basis of Mendelian inheritance of recessive characteristics.

Fluoride Osteosclerosis. C. A. Stevenson and A. R. Watson. Am. J. Roentgenol. 78:13-18 (July) 1957 [Springfield, Ill.].

The authors report on 23 patients between the ages of 44 and 83 years with fluoride osteosclerosis whose roentgenographic records were collected from 170,000 roentgenographic examinations of the spine and pelvis of patients living in Texas and Oklahoma, where many communities have excessive fluoride content in their drinking water. The 23 patients had been drinking water with a fluoride content for many years of from 4 to 8 ppm. In each patient, adequate clinical examination failed to establish any relationship between the roentgenologic findings and the clinical diagnosis of the patient's condition. Each of the patients had lived his entire life in the same fluoride-bearing area in which he was born. An attempt was made to grade the osseous changes on the basis of a 1 to 4 scale, with grade 1 showing bone density of a very minimal degree and grade 4 showing bone density of an extreme degree. Pelvic ligament calcification was graded also on the basis of the 1 to 4 scale, with grade 1 representing minimal calcification in either the sacrotuberous or sacrospinous ligaments and grade 4 showing calcification extending about 6 cm. from the ischium toward the sacrum. Fifteen of the 23 patients had this type of ligamentous calcification, and it closely paralleled the degree of bone density.

The authors' roentgenographic experience with bone changes noted in the 23 patients confirmed Roholm's observation in that the earliest changes of fluoride osteosclerosis occurred in the pelvis and the lumbar spine. These changes consisted of slightly increased bone density, always evenly distributed throughout the vertebral bodies, and appearing bilaterally and symmetrically in the pelvis. There was a definite but slight "ground glass" appearance. The most advanced changes consisted of a chalky-white appearance of the vertebral column and pelvis and in addition a slightly increased density and coarse trabecular pattern in the ribs. Calcification of the sacrospinous and sacrotuberous ligaments began at the ligamentous attachment in the pelvis, usually bilaterally and extended towards the sacrum for distances up to 6 cm. The entire length of the ligaments did not calcify, and no instance of calcification at the sacral end of the ligaments was observed.

Because of the nature of this type of sclerotic process with associated involvement of the pelvic ligaments and the absence of any abnormal blood changes, the differential diagnosis of fluoride osteosclerosis from other diseases producing increased bone density is not difficult. Fluoride osteosclerosis occurring in the patient exposed over a period of many years to fluorides as high as 8 ppm causes no harmful changes. Fluoride osteosclerosis is not evidenced roentgenographically in the patient drinking water with a fluoride content of less than 4 ppm.

Tuberculomas and Hamartomas of the Lung: Comparative Study of 66 Proved Cases. I. M. Bleyer and J. H. Marks. Am. J. Roentgenol. 77:1013-1022 (June) 1957 [Springfield, Ill.].

Tuberculoma is a tumor-like granuloma caused by the tubercle bacillus, encapsulated by connective tissue, and showing no evidence of surrounding inflammation or spread. Hamartoma is a tumor-like formation in which there is an abnormal arrangement of the normal components of the organ from which it arises. Hamartomas may be found in almost any organ. In the lungs there are two types: (1) the adult type, which is a relatively small lesion, and (2) the infant or newborn type, which is a massive, diffuse process often occupying a lobe or even an entire lung. The roentgenologic aspects of 52 pulmonary tuberculomas occurring in 41 patients and 25 pulmonary hamartomas (20 parenchymal and 5 intrabronchial) are presented and correlated with the clinical, surgical, and histological findings. All tuberculomas were circumscribed and were located subpleurally. In 23 patients, the tuberculoma was clinically silent and was discovered on routine or survey chest films. In 14 patients, the history and the symptoms were referable to tuberculosis. In only 4 patients were the history, symptoms, and the physical signs suggestive of tuberculosis. The tuberculomas were removed by wedge resection in 26 patients, by segmental resection in 10, by lobectomy in 4, and by pneumonectomy in 1. The last patient had advanced tuberculosis. Lobectomies were performed either because of technical difficulties or because the gross appearance of the nodule suggested malignant neoplasm. Mycobacterium tuberculosis was found in 11 of the 41 patients with tuberculoma. The tuberculoma probably represents the most benign form of tuberculosis and in its early stages is rarely if ever accompanied by advanced tuberculosis. Such occurred only once among the 41 patients. This is perhaps due to the fact that with a few exceptions the patients in this series had their tuberculomas removed soon after they were discovered. The benignity of tuberculomas, however, is relative and lasts only until their capsule breaks down or until the cavity which precedes some of them reopens. They then discharge their contents into the bronchial tree, as occurred in 3 patients.

All 25 hamartomas in this series were solitary, sharply delineated, and without any roentgenographic signs of perifocal reaction. The 20 hamartomas of the parenchyma appeared on the posteroanterior roentgenograms peripherally in 15 cases and more centrally in 5 cases. The 5 intrabronchial hamartomas caused atelectasis of the respective pulmonary segment. The mass causing the obstruction was not visible on the plain roentgenograms. Three of the 5 patients with such obstruction were bronchoscoped prior to surgery. In 2 the hamartoma was seen. The intrabronchial hamartomas were accompanied by cough and expectoration in 4 patients and hemoptysis in 1. The parenchymal hamartomas were clinically silent and were detected during roentgenologic examinations. The parenchymal hamartomas were removed by wedge or segmental resection in 18 patients, while lobectomy was done in 2 because the frozen section seemed to indicate malignant neoplasm. The intrabronchial hamartomas necessitated lobectomy in 3 patients and pneumonectomy in 2. Hamartomas do not have distinct roentgenograms. Furthermore, they may be present when there is a malignant lesion in the lung or elsewhere in the body. This was the case in 4 of the patients observed by the authors.

PHYSIOLOGY

Monocalcium Disodium Ethylenediaminetetracetate ($Ca-EDTA-Na_2$) in Saturnism: Therapeutic Effect and Effect on the Urinary Lead Excretion: Experience with Rabbits Intoxicated Intravenously, Intramuscularly, and Subcutaneously. M. Salvini, U. Vidali and U. Scudier. Policlinico (sez. med.) 64:82-99 (April) 1957 (In Italian) [Rome].

The authors studied the effect of monocalcium disodium ethylenediaminetetracetate ($Ca-EDTA-Na_2$) in 18 rabbits subdivided into 3 equal groups. The animals were 9 to 13 months old and weighed an average of 2,250 Gm. each. The animals of the first group were given intravenous injections of 3 mg. per kilogram of body weight of lead acetate for 5 days, then they were given intravenous injections of 10 mg. per kilogram of body weight of $Ca-EDTA-Na_2$ for the next 5 days. The animals of the second group were given intramuscular injections of 4 mg. per kilogram of body weight of lead acetate for 6 days; 3 of these animals were then given intravenous injections of $Ca-EDTA-Na_2$ for the next 6 days. Observations made in these last 3 animals showed that the extra amount of lead eliminated as a result of the treatment was very low; therefore, the dose of the drug was increased to 240 mg. per kilogram of body weight per day for 6 days. The animals of the third group were given subcutaneous injections of 24 mg. per kilogram of body weight of lead acetate for 6 days; 3 of these animals were then given injections of 240 mg. per kilogram of body weight of $Ca-EDTA-Na_2$ for the next 6 days. Marked excretion of lead in the urine was observed in all animals during the 6 days following the days in which the animals had been given injections of lead acetate. Intravenous injections of $Ca-EDTA-Na_2$ caused an increase in the amount of lead so excreted in the urine. Treatment with $Ca-EDTA-Na_2$, however, accounted only for a minimal part of the amount of lead that the animals excreted in the urine. The authors believe that $Ca-EDTA-Na_2$ causes decomposition of the lead in the tissues, a reduction of the toxic effect of the lead on certain tissues, and an increased transfer of chelate to the kidney.

In-Flight Hyperventilation During Jet Pilot Training. B. Balke, J. G. Wells and R. T. Clark Jr. J. Aviation Med. 28:241-248 (June) 1957 [St. Paul].

The increasing number of unexplained jet aircraft accidents indicated a need for experimental investigation of possible physiological factors leading to a pilot's incapacity for safe flying. In addition to hypoxia, hyperventilation was suspected as being a possible cause for a critical deterioration of flying performance. Three hundred sixty-seven in-flight samples of mixed expired air were obtained from 29 pilots, whose average age was 22 years, during 125 flights in the course of their training phase in the T-33 type jet aircraft. Carbon dioxide tensions of these air samples were estimated by assuming a tidal volume of 850 cc. and a respiratory dead space of 250 cc., which represented the average values obtained in a laboratory study on 14 aviation cadets. The alveolar carbon dioxide tensions were then calculated according to the barometric pressure present at the moment of sampling. Similar determinations were made using 219 samples of mixed expired air which were obtained from 19 pilots, whose average age was 30 years, during 64 flights in the course of their training phase in the faster F-86 type jet aircraft, and 143 samples of air obtained from 17 pilots, whose average age was 33 years, during 41 missions in the course of their training phase in the still faster F-100 type jet aircraft. Results of in-flight sampling of expired air in the course of these 3 phases of jet training verified the existence of in-flight hyperventilation. Incidents of hyperventilation appeared to become more frequent with the increase in high-performance capabilities of the aircraft flown.

BOOK REVIEWS

Bronchopulmonary Diseases: Basic Aspects, Diagnosis and Treatment. By 142 authors. Edited by Emil A. Naclerio, M.D., Chief of Thoracic Surgical Services, Harlem and Columbus Hospitals, New York. Foreword by Richard W. Overholt, M.D., Director, Overholt Thoracic Clinic, Boston. Cloth. $24. Pp. 956, with 719 illustrations. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1957.

In the past decade, the field of bronchopulmonary disease has developed so rapidly that it is recognized as an integral part of internal medicine and thoracic surgery. Until recently knowledge of this subject was meager, and many patients died as a result of undiagnosed and untreated conditions in this field. Today, many of these patients may be cured and others improved and have longer life. The tremendous progress in fundamental knowledge has greatly facilitated the diagnosis and management of these diseases. The need for an up-to-date, compact, authoritative, and comprehensive compilation on diagnosis and treatment was the basic motive for preparing this volume. A unique feature is the emphasis on certain aspects of embryology, anatomy, physiology, and pathology essential to the understanding of this complex subject and the inclusion of principles of medical and surgical treatment. The practicing physician should be familiar with all facets of this developing field, calling for the combined efforts of physician, surgeon, radiologist, endoscopist, and anesthesiologist. In the first two sections, the book covers fundamentals in the management of asthma and emphysema; physiological and physiopathological mechanisms responsible for the sequence of events are described. The use of special drugs in bronchopulmonary diseases, the development of bronchospirometry, and pulmonary arterial catheterization in pulmonary function are reevaluated. In the section on diagnosis, clinical and laboratory procedures are discussed. Lung biopsy is emphasized and the reliability and pitfalls associated with x-ray diagnosis are pointed out. Certain important subjects are presented as individual monographs. Changes and modern evolution of our present concepts of tuberculosis, cancer, and many other diseases are amply dealt with. With few exceptions, no attempt was made to describe operative techniques, since these are found in books on surgery. The physician dealing with bronchopulmonary diseases must quickly gather evidence and make a wise decision. This volume should prove most helpful in this regard. The authors are all well qualified in their specialties.

The Care of the Expectant Mother. By Josephine Bar M. A., D.M., M.R.C.P., Assistant Obstetrician and Gynaecolog Charing Cross Hospital, London. Cloth. $7.50. Pp. 270, w illustrations. Philosophical Library, Inc., 15 E. 40th St., N York 16, 1956.

The writer has tried to cover the subject of obste rics briefly. This makes the book an abbreviated ou line for guidance of persons with limited training obstetrics. In general, the principles set down a acceptable, although there is disagreement with t statement that the first examination of a virgin woman should be deferred until the 16th week becau no important information can be obtained before this time and that it is difficult to reach the promontory of the sacrum until later in pregnancy. The procedur described for the Friedman test for pregnancy varies from that done in the United States, where only one injection of 10 cc. of filtered urine is given. In th United States, the blood pressure is not considered t be abnormally high when it is over 120/80 mm. H 140/90 is the figure used in most clinics. The write makes the common mistake of considering increased blood pressure as synonymous with toxemia. Too much space is devoted to the detailed description of the Rh factor. Likewise, in discussing edema ir eclamptogenic toxemia, the author dilates on its pres ence in such unimportant locations as the lower ex tremities, hands, and face and fails to call attentio to the critical importance of pulmonary and cerebr edema.

There is a good description of government-con trolled obstetric service in Great Britain, includin insurance benefits, maternity allowance, and priorit in foods and supplements for expectant mothers. Al normal pregnancy and labor are covered briefl Occiput posterior and breech presentations are con sidered as malpresentations. The influence of th arcuate type of bicornuate uterus on transverse pre entation is ignored, as is its connection with breec presentation, prematurity, and intrauterine fetal deat As in most modern textbooks, too much emphasis i placed on the value of x-ray pelvimetry for determin ing cephalopelvic disproportion as compared wit careful estimation of the moldability of the fetal hea and the effect of relaxing on increasing pelvic diam eters during labor. It may be questioned that n 35-year-old primipara or a woman with a long perio of infertility should be given a trial of labor but shoul have a cesarean section. The subject of anesthesia i obstetrics is hardly touched on; in the United State is would be considered a serious omission. The in-ıction of labor in malpositions of the fetus and 'specially in transverse lie or its recurrence after ›rrection" would not be an acceptable teaching in :ost clinics in the United States. There is, under these rcumstances, far too much danger of prolapsed cord.

The illustrations include retouched roentgenograms ealing with x-ray pelvimetry, twins, and a dead fetus; hotographs showing abdominal palpation; and a dis-›rted sagittal section drawing depicting the Hegar's ign of pregnancy. The drawings of the female bony ›elvis are not well done and the embryologic drawngs, with the exception of those showing the fetal irculation, leave much to be desired. In general, the ormat of the book is good. The type is clear and the ›utline form with italicized subheadings makes for eady reference.

Ciba Foundation Colloquia on Ageing. Volume 3: Methodol›gy of the Study of Ageing. Editors for Ciba Foundation: G. E. W. Wolstenholme, O.B.E., M.A., M.B., and Cecilia M. O'Connor, B.Sc. Cloth. $6.50. Pp. 202, with 47 illustrations. Little, Brown & Company, 34 Beacon St., Boston 6; J. & A. Churchill, Ltd., 104 Gloucester Place, Portman Sq., London, W. 1, England, 1957.

This third volume maintains the same high standards of the two previous volumes. The earlier volumes dealt with general aspects and ageing in transient tissues. In the current book, 12 subjects are reviewed by experienced investigators, and a summary of their personal researches is given. Each chapter includes an account of the discussion that followed the presentation of the paper. As those present, limited to 28, were persons with long experience in research in gerontology, the report may be accepted as the best current thought on the subjects presented. Much credit for the substance of this work is due Dr. Charles H. Best, of Toronto, who was the chairman, and to Dr. R. E. Tunbridge, of Leeds, England, who was a consultant.

The subjects, obviously selective, included: The Biological Approach in the Comparative Study of Ageing by Alex Comfort; The Study of the Ageing of Cells by J. F. Danielli; Studies on Adaptation as a Method of Gerontological Research by F. Verzar; Methods and Limitations in Studies of Human Organ System Function by M. Landowne; Nutrition, Liver Disease and Some Aspects of Ageing in Africans by T. Gillman; and Methodology of the Study of Intelligence and Emotion in Ageing by I. Lorge of Columbia University, New York City. The discussions by Verzar, Tunbridge, Gillman, and Lorge are especially noteworthy and stimulating to thought. The focus of attention on the biological factors involved at the cell level, including some references to genetics and the chemical processes involved, merits wide study. More people are living longer. The biology of aging is a fascinating field which will yield valuable information as the newer biological techniques are used and performance is scientifically evaluated. This volume on methodology is most timely, since many groups are establishing study centers for research in the field of aging. Reference to this small volume packed with data of first importance should prove exceedingly helpful. This work is highly recommended.

Practical Dermatology. By Samuel M. Peck, B.S., M.D., Dermatologist to Mount Sinai Hospital, New York, with Laurence L. Palitz, M.D., Ph.D. Cloth. $7. Pp. 380, with 122 illustrations. Landsberger Medical Books, Inc., distributed by Blakiston Division, McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36, 1956.

This compact volume by two prominent dermatologists combines the features of a handbook and brief textbook of dermatology for practitioners. It deals with the more common dermatoses seen in practice and emphasizes diagnosis and treatment. The authors include such information on etiology and pathological physiology as they feel is necessary for a rational approach to therapy. This book presents the author's own views on the cause, mechanism, and treatment of the various dermatoses. In discussing therapy, they recommend only those measures with which they have had ample personal experience. These include the use of most of the many new agents available. The material is arranged in orthodox fashion and presented in a clear, concise, and readable manner. While many of the photographs are excellent, a number are lacking in clarity. The classification of hemorrhagic diseases should be expanded to include some of the more recently discovered disturbances of the clotting factors. This book, especially the sections on therapy, which include many prescriptions and detailed instructions for their use, should be useful to practitioners. The chapter on contact dermatitis and industrial dermatoses is particularly authoritative, since Dr. Peck has long been a leader in this field.

Medical Physiology. Edited by Philip Bard, Professor of Physiology, School of Medicine, Johns Hopkins University, Baltimore. [Formerly: Physiology in Modern Medicine, by J. J. R. Macleod.] Collaborators: Henry C. Bazett, and others. Tenth edition. Cloth. $14. Pp. 1421, with 438 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1957.

This new edition is the work of 13 authors. It contains extensive discussions of blood and circulation, respiration, the alimentary tract, metabolism and nutrition, the distribution and regulation of body fluids, endocrinology, the neuromuscular system, the central nervous system, and the special senses. There is no special section on reproduction. Some of the essential phenomena are dealt with in the chapters on the circulation and on endocrinology. The physiology of the skin is similarly represented by various passages in the sections on body fluids, circulation, and neurosensory mechanisms, and the physiology of the ureters and urinary bladder is mentioned in connection with the autonomic nervous system. The present edition of this work is probably most valuable for its thorough treatment of the physiology of the central nervous system and for its bibliography. It is well indexed.

QUERIES AND MINOR NOTES

RADIATION AND MASS X-RAY SCREENING

To the Editor:—*The United States Public Health Service has seemingly recommended against wide-scale use of chest x-rays for detecting tuberculosis except in certain areas where the incidence of tuberculosis is increased. The National Tuberculosis Association has submitted figures from both the National Academy of Sciences and the Brookhaven Laboratory, which give the amounts of radiation to the gonads from various x-ray procedures. It would seem that the amounts received through the use of routine chest x-rays during the reproductive period, while not negligible, are relatively insignificant. For many years there has been a compulsory program of yearly x-rays for all staff members and students at a university. Please elaborate on mass x-ray screening as a tuberculosis detection program.*

Paul C. Schumacher, M.D., Oxford, Ohio.

Answer.—It would not be correct to infer from recent articles in the press that the Public Health Service is "against mass x-ray screening." The Service is, however, urging public and private agencies to evaluate their present programs, so that they may utilize x-ray equipment more selectively and thus avoid subjecting large segments of the population to unnecessary radiation. Toward this end the Public Health Service recommends that emphasis be placed on x-ray screening of population groups that are known to be at the highest risk of contracting tuberculosis and, thus, can be expected to yield considerable numbers of new cases. Examples of such groups are contacts of open cases, persons admitted to hospitals, patients and employees in mental hospitals, inmates of correctional institutions, low economic groups (particularly those in slum areas), migrant laborers, alcoholics, and others.

This principle of selectivity, however, implies more than merely the choice of population groups to be surveyed. Selection of areas for screening activity should also be determined by the quality and quantity of follow-up services available in any given area, diagnostic and treatment facilities, costs, accessibility of personnel, and the community's potentiality for making a maximum utilization of survey findings. For population groups known to be at low risk, the Service recommends the tuberculin test as an initial screening device and the use of x-ray examinations among positive reactors only.

The Public Health Service, of course, has been keenly aware for years that there is a measure of radiation hazard involved in the use of x-ray machines. Indeed, the earliest publications of the tuberculosis program of the Public Health Service stressed the need to protect technicians, survey clerical personnel, and x-ray subjects from excessive radiation. Current findings that emphasize the significance of relatively low-level radiation exposure now serve to intensify former efforts of the Service to eliminate all unnecessary and avoidable radiation. Therefore, the Service urges the application of protective devices to x-ray equipment, such as screens, cones, and filters. Emphasis is also being placed on the need for systematic inspection of all x-ray case-finding equipment, particularly at a time immediately prior to the beginning of a survey and at frequent intervals thereafter. Early this autumn a national conference on this subject will be held in Washington. At its conclusion the Public Health Service expects to issue a more explicit policy.

THROAT IRRITATION FROM CLEANING TELEVISION TUBES

To the Editor:—*A patient, aged 38 years, who works in a television factory, has a chronic cough. X-ray has shown no evidence of active pathology, only healed lesions. The patient handles tubes which he washes with hydrofluoric acid (70%) and then with ammonium bifluoride; then he coats the tubes with a mixture of barium acetate, potassium silicate, and amyl acetate. Are these compounds dangerous to health, and can they be the cause of this patient's cough?*

Chester A. DeWitt, M.D., Silver Lake, Wis.

Answer.—Nothing in this query indicates the actuality of some exposure or the nature and degree of protection now existing. Assuming that some exposure takes place to either vaporous products or possibly dust in the making up of solutions, it may be urged that several of the constituents are well-known throat irritants and some are specifically toxic. Throat irritation may be associated with hydrofluoric acid, ammonium bifluoride, potassium silicate, and amyl acetate. Although amyl acetate may not be rated as highly toxic, it is outstanding as a

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The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

throat irritant leading to coughing. Exposure levels below that of odor detection produce coughing in some persons. One reason why amyl acetate is regarded as nontoxic is that few persons will be willing to remain in any high-exposure area because of coughing. It is well known that hydrofluoric acid and ammonium bifluoride readily lead to skin damage if exposure exists. If well-designed protective exhaust systems are not now present, such may be in order.

DRUGS USED FOR TREATING TUBERCULOSIS

To the Editor:—*Has isoniazid or aminosalicylic acid any depressant effect upon spermatogenesis? Would pregnant mare's serum gonadotropin be contraindicated in arrested pulmonary tuberculosis? Hugh Clemmer, M.D., Lancaster, Calif.*

To the Editor:—*Will dihydrostreptomycin, aminosalicylic acid, or isoniazid, administered singly or in combination in the treatment of tuberculosis, cause hirsutism in women?*

Ralph L. Cash, M.D., Princeton, Ky.

These inquiries were referred to two consultants, whose respective replies follow.—Ed.

Answer.—There is not enough evidence to indicate whether any of the drugs used in the treatment of tuberculosis have a depressant effect upon spermatogenesis or cause hirsutism. Because aminosalicylic acid is a salicylate, it might have a slight cortisone-like action, but there is no clinical evidence of an effect as severe as hirsutism.

Answer.—No well-documented study has been found suggesting that isoniazid and aminosalicylic acid depress spermatogenesis or that pregnant mare's serum gonadotropin is contraindicated in arrested tuberculosis. No reference has been found to suggest that dihydrostreptomycin, aminosalicylic acid, or isoniazid, administered singly or in combination in the treatment of tuberculosis, cause hirsutism in girls or women.

PROPHYLAXIS OF RHEUMATIC FEVER

To the Editor:—*Please supply information on the current status of penicillin prophylaxis in rheumatic heart disease, specifically related to the duration of therapy after acute rheumatic fever. What is the treatment of adults who, on routine examination, are found to have rheumatic valvular heart disease without any previous history of acute rheumatic fever?*

Gerald Lieberman, M.D.,
West Los Angeles, Calif.

Answer.—Penicillin, given orally or by injection, in the form of benzathine penicillin G is considered the best form of prophylaxis in rheumatic heart disease. No one really knows how long prophylaxis should be continued after acute rheumatic fever. Since recurrences usually occur within five years after the initial attack, it was thought that five years of prophylaxis might be sufficient. However, since recurrences can occur after the five-year period, many investigators now believe that penicillin prophylaxis should be continued indefinitely.

As a general rule, adults who are found, on routine examination, to have rheumatic heart disease without any previous history of rheumatic fever are not put on penicillin prophylaxis. However, it is considered desirable to place those patients having frequent sore throats on penicillin prophylaxis. Also, if any of these individuals develop an acute upper respiratory infection which may be of streptococcic origin, prompt administration of penicillin by injection may prevent a possible recurrence of acute rheumatic fever.

FELDSPAR DUST

To the Editor:—*Is definite risk of silicosis associated with heavy or moderate exposure to feldspar dust, either in the grinding and processing or in the open mining? Also, is there the same or a similar increase in toxicity, related to the smaller particulate sizes of feldspar, as with some of the other silicates? Is masking indicated in certain processing operations, or is the necessity of masking dependent upon the particulate size?*

Daniel C. Wilkerson Jr., M.D., Bedford, Va.

Answer.—Feldspar is a silicate. It is a general name for a group of rock minerals corresponding to the general formulas, $R' AlSi_3O_8$ and $R'' Al_2 (SiO_4)_2$, where R=potassium, sodium, calcium, barium, etc. According to our present knowledge and from an epidemiologic viewpoint, it is an inert dust. The smaller the particle size, the greater the chance of its gaining entrance into the lung. The use of a mask or respirator is only one form of prevention. Whenever concentrations of any dust are heavy and exposure prolonged, a wetting-down process or removal of dust at its source by exhaust ventilation should be employed.

SUSTANCES TO INCREASE TANNING

To the Editor:—*Is bergamot oil harmful to the skin when used with some vehicle to promote tanning? Will lime juice aid the process of tanning? M.D., California.*

Answer.—Bergamot oil and lime juice contain chemicals which increase both the erythema and the pigment response of the skin to sunlight exposure. The active ingredient in these two natural products is a photodynamic furocoumarin, 5-methoxypsoralen. Since the concentrations of 5-methoxypsoralen in bergamot oil and lime juice may vary, the response is unpredictable, the tanning produced is uneven and spotty, and, finally, marked erythema, edema, pain and vesiculation may occasionally occur. For these reasons essential oils and plant juices which contain photodynamic chemicals are not recommended for purposes of increasing tanning.

TESTICULAR ENLARGEMENT WITH LEUKEMIA

To the Editor:—*A 5-year-old boy with acute lymphocytic leukemia, type unspecified, has had a continuous clinical remission for two and one-half years. During this time he has had the continual administration daily of Cortone (25 mg.) and Purinethol (25 mg.). Recently the Cortone therapy was discontinued, and since then he has been found to have rapidly enlarging, firm testes that are slightly tender. There is a small pea-sized nodule in the epididymis of the left testis. The left testis is enlarging more rapidly and is already approximately twice the size of the right testis. There is no evidence of penile enlargement or other secondary sexual changes. On physical examination the patient is apparently well, with no evidence of a leukemia relapse. Except for generalized lymphadenopathy and mild Cushing's effect (from the steroids), he is otherwise in good health. The question of extensive investigation, including determination of rate of 17-ketosteroid excretion, biopsy of a testicular specimen, and bone marrow studies, in this boy presents a financial as well as a psychological problem. Might his basic disease or the previous therapy account for the enlarging testes? If not, what studies might be indicated at this time?*

H. H. Pride, M.D., Knoxville, Tenn.

This inquiry has been referred to two consultants, whose respective replies follow.—Ed.

Answer.—Nodular swellings are not uncommon in the course of leukemia. While the testis is an infrequent site of metastasis, the nodules probably represent localized infiltrations with leukemic cells similar to involvement of other organs, such as the liver, spleen, kidney, and nervous system. Often the appearance of nodular masses or the enlargement of the spleen represents an early manifestation of relapse in spite of a normal blood smear. Nothing would be accomplished by ketosteroid examinations except for academic interest. Of greater moment is the need for reexamining the bone marrow for evidence of relapse. The prolonged control of leukemia with minimal therapy in this case is worthy of note and reflects either the great variability in severity of this disease or an exceptional response to treatment. If the bone marrow should be found to be heavily involved with leukemia, therapy should be directed toward increasing the dosage of the steroids in the form of prednisone, 40 to 60 mg. daily, and/or a shift to Methotrexate, 2.5 mg. daily.

Answer.—Although not pertinent to the specific question regarding the probable cause for the enlargement of the testes, the fact that this child has exhibited a continuous clinical remission of symptoms and signs of acute lymphocytic leukemia for two and one-half years is worthy of comment. Such a remission must be considered as most unusual and may be an indication for review of the original hematological and bone marrow material upon which the diagnosis was based.

Colleagues with extensive experience in the use of hormone therapy and in conditions affecting the testes have not encountered a situation similar to that described in the inquiry. Although leukemia may affect any part of the body, a decision as to whether the enlargement of the testes in this instance is due to leukemia or to some separate or superimposed [illegible] cannot be answered with certainty without biopsy of a testicular specimen. If study of bone marrow reveals a picture compatible with leukemia, one might assume, with a fair chance of being correct, that the testicular involvement is due to leukemia. There appears to be no indication for a determination of the rate of 17-ketosteroid excretion in this case, but there does appear to be a definite indication for examination of bone marrow or biopsy of testicular tissue or both.

BROMSULPHALEIN IN SUBCUTANEOUS TISSUE

To the Editor:—*It is generally accepted that Bromsulphalein, as used intravenously for liver-function testing, is markedly toxic to tissues in concentrated solution, which may be observed if some of the dye gets out of the vein during intravenous administration. Would the chance of tissue necrosis be reduced by the immediate injection of hyaluronidase, local and/or systemic administration of hydrocortisone, application of icepacks, etc.? What is the recommended management of this situation?*

M.D., West Palm Beach, Fla.

Answer.—The best treatment of the irritating effects of Bromsulphalein on the subcutaneous tissues is their prevention. Bromsulphalein should be injected slowly and blood drawn into the injecting syringe intermittently to be sure that the needle is still in the vein. The injection should be discontinued as soon as there is indication that the dye is not being injected intravenously. If these precautions are observed, the small amount of dye that will occasionally be injected subcutaneously will produce no more than a stinging sensation and redness and local pain for 24 to 48 hours. In such a situation, elevation of the extremity and application of dry or moist heat is helpful. The necrosis produced from larger amounts of dye may be due to marked local vasospasm, and prompt subcutaneous injection of 1% aqueous procaine hydrochloride will dilute the dye, stop the pain, and reduce the likelihood of vasospasm. The procaine may be combined with hyaluronidase.

TINE USE OF VITAMIN K PARATIONS IN OBSTETRICS

he Editor:—*For many years the routine use of tamin K preparations such as Hykinone, admin- tered intramuscularly to all patients admitted to e labor rooms of a hospital, has been a standing der for most obstetricians. Hykinone has been ven regardless of the stage of labor, many pa- nts receiving it only minutes before delivery. Is is more or less routine use of Hykinone one of e many things one starts using and continues ing forever? Is it still considered to have some neficial effect upon blood clotting in both mother d baby? Is it something that could be done with- it?* *Elwyn H. Welch, M.D., Pomona, Calif.*

nswer.—It has not been proved that there is any d for the routine use of any vitamin K prepara- . Greenhill in "Obstetrics" (ed. 11, Philadelphia. B. Saunders Company, 1955, p. 849) says: "Sanford. nigelsky and Chapin maintain that vitamin K does affect the frequency of hemorrhagic manifesta- s. In their series of 1693 patients, 711 of whom ived vitamin K, there were just as many con- tival, vaginal, petechial, cerebral and umbilical orrhages and instances of melena and cephalhem- ma in one group as in the other. The mortality for two groups was the same."

otter emphasizes the following: 1. In the majority nfants the prothrombin time is prolonged during greater part of the first week of life beyond that ch is normal for the adult. 2. The administration itamin K to the mother prior to delivery or to the nt after birth will usually prevent the customary longation. 3. After prolongation has once occurred, ninistration of vitamin K will usually cause a return ormal. There is no proof, however, that a prolonged thrombin time is a direct cause of hemorrhage. e early optimistic prophecies that vitamin K would vent hemorrhage and reduce the mortality rates e not materialized. From a study of 13,190 cases erved at the Chicago Lying-in Hospital of the iversity of Chicago, Potter concluded that no de- ase in infant or fetal mortality can be expected n the routine administration of vitamin K to all men during labor.

ince there is no specific treatment for cerebral orrhage and since vitamin K does raise the pro- ombin value of the blood of the newborn infant hin four hours of its administration, it should be en to all infants suspected of having cerebral orrhage. The average single dose of synthetic min K given prophylactically to women is 2 mg. least four hours before delivery. The same amount y be given to the baby after delivery, whether or the mother received the vitamin. Sanford and as- iates recommend giving vitamin C to infants sus- ted of having cerebral hemorrhage, because they found this vitamin to be consistently low in newborn infants with cerebral hemorrhage. Greenhill recommends that in every prolonged labor or anticipated difficult vaginal delivery vitamin K should be given to the mother at least four hours before delivery.

SATURATED AND UNSATURATED FATTY ACIDS

To the Editor:—*Please explain in simple language just what are saturated and unsaturated fatty acids. How can one distinguish between them when consuming edible fats?* *M.D., Illinois.*

Answer.—When the carbon atoms in the chain of a fatty acid are all linked to adjacent carbon atoms by a single chemical bond, the fatty acid is said to be saturated. If, however, there exists between two carbon atoms two chemical bonds, the two carbon atoms are said to linked by a "double bond," and the fatty acid is said to be unsaturated. The more of such "double bonds" that exist in the chain of a fatty acid molecule, the higher is the degree of unsaturation. In general, but not always, fats that are liquid at room temperature are more unsaturated than those which are solid. The major biologically occurring saturated fatty acids are palmitic, stearic, and butyric acids. The major biologically occurring unsaturated fatty acids are oleic and linoleic acids. A notable exception to the rule of liquidity at room temperature is coconut oil, which contains primarily saturated fatty acids. The best way to know which edible fats are saturated and which unsaturated is to consult a table of composition, such as occurs in Bailey's "Industrial Oil and Fat Products" (New York. Interscience Publishers, Inc., 1951).

VACCINE PROPHYLAXIS FOR MICROCOCCIC AND STREPTOCOCCIC INFECTIONS

To the Editor:—*A patient with nephrosis is subject to micrococcic (staphylococcic) and streptococcic infections. Please evaluate the problems involved in developing a vaccine giving long-term immunity to the above bacteria.*

I. E. Cooper, M.D., Port Richmond, N. Y.

Answer.—It is generally agreed that vaccine prophylaxis or therapy of micrococcic infections is of questionable value. Active immunization with formalinized toxin (toxoid) has given promising results in the treatment of skin infections but not in infections such as chronic micrococcic osteomyelitis (MacDonald and Taylor: *Lancet* 2:558, 1951). Pathogenic micrococci produce a number of hemolytic toxins, of which the α-toxin, which has leukocidin and dermonecrotic activity, and the δ-toxin, which has dermonecrotic activity, are associated with virulence. The α-toxin has been the most thoroughly investigated in connection with effective immunity. Preparation of the toxoid requires particular care to insure atoxicity and antigenicity creased blood flow through the muscles and reduction of the muscle tightness associated with inactivity; (2) as a warm fluid with a deep tradition of psychological significance, it probably exerts a powerful placebo action.

PROPHYLACTIC TREATMENT OF PATIENT EXPOSED TO VENEREAL DISEASE

To THE EDITOR:—*What is the proper medical management of a symptomless patient exposed to known venereal disease? Has chemoprophylaxis been definitely demonstrated to be effective in such a condition? Please give recommended prophylactic dosage for syphilis and gonorrhea.*

Harry E. Zion, M.D., Pullman, Wash.

ANSWER.—Due to the availability, safety, and low cost of penicillin, prophylactic treatment of venereal disease is indicated before clinical manifestations appear or a diagnosis is made. However, employment of this procedure makes a careful follow-up period of at least one year mandatory. Physical examinations and serologic tests are required. If the treatment does not eradicate the disease, it may merely mask it, leading to the development of late complications or infectious relapse. The recommended dosage varies with each authority. However, a single intramuscular injection of 2,400,000 units of procaine penicillin is considered to be adequate by most.

SURGICAL TREATMENT OF CHRONIC ANGINA PECTORIS

To THE EDITOR:—*Do surgeons in this country perform ligation of the internal mammary arteries in severe cases of chronic angina pectoris not amenable to medical treatment? Italian surgeons are said to perform this operation with marked success and in many cases with almost complete abolishment of atrocious anginal pains.*

Joseph A. Belott, M.D., Port Orange, Fla.

ANSWER.—Technically, surgical treatment of chronic angina pectoris is easily done, and there should be some local surgeon who can perform the operation. The popularity of this operation is based upon the fact that it is such a simple procedure. However, physiological tests have not as yet been made as to whether the operation improves the coronary circulation. Physicians familiar with the coronary circulation cannot understand the rationale of it. The benefit that the patients say they have might be based on psychological reasons. If the circulation in the heart is actually improved by this operation, it should be possible to demonstrate improvement by various tests in the experimental laboratory. So far these tests do not exist.

DIABETES WITH HEMOPHILIA

To THE EDITOR:—*Are there any cases on record of diabetes in patients with hemophilia?*

S. B. Ross, M.D., Brewster, N.Y.

ANSWER.—Careful search has disclosed no recorded case of diabetes in an individual with hemophilia. However, such a combination might by chance occur rarely, and a more exhaustive review of the literature might reveal such.

TOXICITY OF GRAPHITE

To THE EDITOR:—*In the query and minor note on toxicity of graphite in the issue of* THE JOURNAL *for Aug. 10, 1957, page 1727, it is stated that there is no evidence that graphite affects the respiratory tract. Graphite pneumoconiosis is a recognized condition, characterized by nodular masses sometimes containing cavities filled with a suspension of graphite in fluid. The clinical manifestations are described as similar to "slowly developing silicosis," with a radiologic picture resembling pneumoconiosis of coal miners. Graphite pneumoconiosis is compensable in Great Britain (Hunter: Diseases of Occupations, London, English Universities Press, 1955, pp. 187, 854).*

Amour F. Liber, M.D.
130 W. Kingsbridge Rd.
Bronx 68, N. Y.

The above comment was referred to the consultant who answered the original query, and his reply follows.—ED.

To THE EDITOR:—*It is quite true that any dust might cause changes within the lung to be noted by x-ray, provided that there is a prolonged exposure to severe concentrations of dust of minute particle size. It is also true that instances of graphite pneumoconiosis have been reported in the literature, almost entirely from the British medical journals. There is reason to believe that there must have been present in these cases a percentage of free silica or that they represented (as observed by McCord) "only accumulation of graphite itself without tissue response."*

Graphite is used extensively in American industry, and, if it were per se a cause of pneumoconiosis, the incidence should be high enough to attain cognizance. If one were to agree that it can cause a pneumoconiosis, then one must also state that within present experience it would be a benign pneumoconiosis. For an excellent review of the subject, the reader is referred to McCord's article "Graphite (Plumbago, Black Lead), as a Source of Dusty Lung Disease" (Indust. Med. 18:483, 1949).

WASHINGTON NEWS

FROM THE WASHINGTON OFFICE OF THE AMERICAN MEDICAL ASSOCIATION

Asian Influenza Vaccine Being Rapidly shipped . .
Regard for "Human Qualities" in Medical Students . .
HEW Officials Press for Aid to Medical Schools . .
WHO Cautions on Health Hazards in Atomic Reactors . .

ASIAN INFLUENZA VACCINE BEING SHIPPED OUT RAPIDLY

The Public Health Service reports that manufacturers are packaging and shipping out Asian influenza vaccine "almost as fast as it is tested and released by the service."

At the same time, PHS says there is "some disparity" between shipments to states and state quotas set under the voluntary allocation system. Manufacturers attribute the variations to the filling of orders received prior to agreement on allocations, the time lags between allocation and shipment, and differences in distribution facilities of the six producers. Allocations were agreed to on Sept. 5.

Of the 13,502,947 cc. released in August and September, 11,245,055 cc. had been shipped by Oct. 4. Of the total the armed services received 4,371,300 cc. and civilian outlets 6,873,755. PHS points out that some time lag between release and shipment is "normal and inevitable"; it regards the delays so far as a "reasonable minimum."

The allocation plan provides that each state receive a portion of each release that corresponds to the state's percentage of the national population.

Even though some vaccine had been shipped out before the allocation system was put into effect, with few exceptions, states had received close to the amount to which they were entitled up to Oct. 4. There appeared to be no particular pattern, geographical or otherwise, in the discrepancies. Of the 16 states that had received overshipments, a number were in the east, but in the list also were Georgia, Louisiana, Minnesota, Mississippi, Missouri, Oregon, Tennessee, and Utah.

Of the 25 states that had not received their full quotas, California's deficit was the greatest, both percentagewise and in number of doses. That state is scheduled for 7.9% of each release, but had received only 7% of the total or 481,225 cc.

The District of Columbia had the greatest percentage of overshipment. It is scheduled for 0.5% of each shipment, but had received 1.3% of the total, or 88,025 cc. Also exceeding its allocation was New Jersey, which was scheduled for 3.2% of the total but had received 4%, or 273,125 cc. "Shortages" and "overshipments" to states in most cases were between 8,000 and 16,000 shots, discrepancies manufacturers expect would easily be corrected as more shipments are made.

ASIAN INFLUENZA ON INCREASE BUT DEATH RATE ABOUT THE SAME

There is "widespread infection" by Asian influenza virus throughout the United States and the number of cases continues a steady increase, but there is no indication that the death rate is rising. This is the way the Public Health Service in mid-October summarizes its information gathered from state health officers, individual physicians, and school reports on absenteeism.

Because reporting lags a week to two weeks behind analysis and publication of findings, there is only a general estimate on the total number of cases, now accepted as in excess of a million.

A check by PHS on 114 cities located in all parts of the country shows increases, but not over 10% per week. Comments PHS: "These data . . . show no marked increase over normal occurrence at this time of the year." California and Louisiana continue to report most deaths, with pneumonia a complication in nearly all cases.

The pattern is one varying from sporadic occurrence to widespread outbreaks and epidemics. Every section of the country has had experience with the disease. On the status of confirmations, PHS says: "Laboratory confirmations of influenza by serologic tests or by isolation of virus have been numerous in a large proportion of states and occasional in others. The volume of these reports indicates widespread infection by the Asian strain of influenza virus throughout the country."

DR. HESS CALLS FOR NEW EMPHASIS IN PICKING MEDICAL STUDENTS

Dr. Elmer Hess, making his first public address since becoming chairman of the Health Resources Advisory Committee in the Office of Defense Mobilization, advised medical schools to continue to consider the "human qualities" and not just scholastic standing in picking candidates for medical schools. He spoke at the annual scientific assembly of the District of Columbia Medical Society.

Students are now being screened so carefully before admission it seems that schools are picking only those candidates "with the best brains," the former president of the American Medical Association stated. He also had some advice for professors and teachers in medical schools who complain about some actions of the A. M. A. and their state and local medical societies. The complainers should take active part in such meetings and let their viewpoints be known, Dr. Hess said. As medical educators, they are still looked up to by their former students who expect to hear from them, Dr. Hess added.

Drawing on his recent tour of U. S. air bases in England and West Germany, Dr. Hess said he felt that the world was so close to total war that it behooves physicians to take an active interest in civil defense and survival phases of an atomic war. When the attack comes, he said, a dedicated medical profession will be essential for survival.

AID TO HIGHER EDUCATION ADVOCATED

Two officials of the Department of Health, Education, and Welfare, speaking within days after Russian scientific manpower had succeeded in launching the earth satellite, again advocated increased support for higher education, including medical schools.

Under Secretary John A. Perkins told a business group:

"To educate as we need to be educated, we cannot and should not do as Russia does. There the dictators, recognizing the essentiality of education to industrial production and national power, arbitrarily marshall the necessary resources. Here in our country every citizen must first recognize that education is to the nation what the development department is to a single business enterprise. . . . We must tax ourselves and make benefactions to finance the break-through in education to a higher level of quality and quantity. It is up to each of us to support both public and private education if the democratic way is to meet the test."

Special Health Assistant Aims C. McGuinness, dedicating a research center, renewed his plea for federal construction aid to medical schools. He argued that a continued large population increase estimated at 3 million a year and the increased complexity of medical science constitute "a clear threat to future progress of American medicine."

The nation's medical schools, he declared, are facing serious problems. They are finding it increasingly difficult to meet the steadily rising demand for well-trained physicians and other health specialists.

"A substantial percentage of our medical school buildings are wholly outmoded and unsuited to today's educational needs. Also, there is little if any room for expansion of student enrollments. Most medical schools, private and public, are pressed simply to meet their regular operating expenses. Of necessity, funds which could have been used for much-needed improvement and expansion of buildings have had to be used to cover current operating costs."

Although Congress a year ago passed a grant program to assist in building medical research facilities this year, it failed to authorize the administration's request for aid in building classrooms and teaching laboratories. He said the administration request for a five-year program of 225 million dollars for matching funds would bring medical schools much closer to current and projected needs.

Dr. McGuinness held that the need for other trained health personnel also is acute. "We need more teachers, more psychiatrists, psychologists, psychiatric nurses and psychiatric social workers. We need biochemists, neurophysiologists, pharmocologists and neuro chemists. The wellspring of the scientific personnel needed in this great effort is the modern medical school."

TRAINING FOR HEALTH PERSONNEL IN RADIATION PROBLEMS

A World Health Organization committee says there is a public health responsibility in nuclear energy reactors, starting with the selection of a site right through to the actual operation. The group which recently met in Geneva is known as the Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel.

It held that nuclear radiation in all its forms is generally harmful to living organisms, and the radioactive contamination of any inhabited area presents a major public health hazard which must be solved if nuclear energy is to be fully realized. "All medical and health workers must, therefore, be trained to meet the new demands on them," the committee states.

To this end, the committee drew up a training schedule for all categories of public health personnel, and suggested hospital administrators, industrial hygiene workers, sanitary engineers, mental health specialists, and public health nurses, among others, take courses on how to protect the public against radiation.

The committee's report must be approved by the WHO executive board, which meets next January.

MISCELLANY

A House subcommittee has four more stops on its schedule of hearings on federal-state relations: San Francisco Oct. 28-30, New Orleans Nov. 18-19, Miami Nov. 21-22, and Raleigh, N. C., Dec. 10-12. The objective is to determine if there is a "proper and satisfactory" division of responsibility among the levels of government in various activities and programs, including health and medical.

The Joint Blood Council has published a pamphlet on "Standards for Accreditation of a Blood Transfusion Service" and a progress report on the council's survey of blood usage and sources.

In connection with a survey, the Joint Commission on Mental Illness and Health is interested in obtaining addresses of voluntary organizations of former mental patients.

The low-power research reactor destined for the Navy Hospital at Bethesda, Md., first will be put in operation at the atomic energy trade fair in New York City's Coliseum, Oct. 28 to 31.

Nuclear safety problems will be discussed by government and industry spokesmen at a safety conference in New York City on Oct. 21. It is being sponsored by the Atomic Energy Commission, the American Nuclear Society, and the Atomic Industrial Forum.

THE JOURNAL

OF THE

American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 165, NO. 8

CHICAGO, ILLINOIS

OCTOBER 26, 1957

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CONGENITAL CARDIOVASCULAR ANOMALIES IN ADULTS

John B. Johnson, M.D., John W. Lawlah, M.D.
and
Leslie E. Hedgepath, M.D., Washington, D. C.

That congenital cardiovascular anomalies must be considered as possible causes of various symptoms developing during adult life is demonstrated by the detection of 29 cases of this sort within five years in a small adult cardiac clinic. The roentgenographic configuration of the heart and great vessels was often the first clue; data obtained by catheterizing the heart via either the antecubital or the saphenous vein were generally decisive. Left-to-right shunt anomalies were the commonest type in this group of 29. Nine of the lesions were interatrial septal defects, and detailed findings are given for these cases, all of which occurred in women. This experience showed that congenital heart disease which has escaped recognition in childhood may become significant in later life. In most instances the defect was of a type that is now curable by surgery.

TO MANY PHYSICIANS, congenital heart disease in clinical practice is still a disorder of infants and children. Often the physician assumes that, in an individual who has enjoyed reasonably good health through adolescence and then shows signs of organic heart disease in adult life, the etiological basis must be an acquired form of heart disease.

During recent years, accurately established diagnoses in congenital heart disease have made it possible, increasingly, to delineate the clinical course and the diagnostic features of those congenital anomalies compatible with growth and development into adulthood. As a result of these advances in diagnostic procedures, it is beginning to be appreciated that congenital heart disease may be much more important in the etiology of heart disease in adults than was formerly recognized.

During the past few years, we, like others in adult cardiovascular clinics, have found it mandatory to become familiar with the clinical course and skilled in the accurate diagnosis of congenital heart disease in adults. On occasion we have been surprised, and to some degree embarrassed, to find that a clinical diagnosis of "probable rheumatic heart disease" with mitral insufficiency in patients under treatment for years in our cardiac clinic has, on further study, proved otherwise. Careful reevaluation of roentgenograms of the chest, cardiac catheterization, and angiocardiography in some of these patients has demonstrated a congenital etiology as the cause of the heart disease. In most of these cases, the congenital lesion has been shown to be correctable by surgical therapy.

Certain of the congenital cardiovascular anomalies, such as patent ductus arteriosus, coarctation of the aorta, and isolated pulmonic stenosis, have

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From the Cardiovascular Laboratory of the Department of Medicine of Howard University and Freedmen's Hospital.

quite characteristic physical signs which are readily detected on physical examination. The above anomalies with characteristic physical signs were not common in the population of our adult cardiac clinic. We have reviewed the results of the regular clinical procedures initially employed in the study of these cases in our clinic, including auscultation, clinical history, and roentgenograms. We found that the roentgenographic configuration of the heart and great vessels provides the most frequent authentic signs of congenital cardiovascular disease in the adult.

We have come to appreciate the fact that the radiologist is in a strategic position to assist in the detection of the congenital cardiovascular lesion in the adult. The report of the radiologist, indicating suspicious congenital cardiovascular configuration, may be the initial clue to an accurate diagnosis of congenital heart disease. This paper reports our experience with congenital cardiovascular disease in adults in a small cardiac clinic, with particular reference to frequency of occurrence and types of congenital cardiovascular anomalies.

During the past five years, the following congenital cardiovascular lesions have been discovered among routine admissions to our adult cardiac clinic: (1) 14 congenital cardiovascular anomalies resulting in shunting of arterialized blood into the right side of the heart (including 2 in older women with interatrial septal defects in whom severe pulmonary hypertension had developed, resulting in reversal of flow and right-to-left shunt), (2) n congenital cardiovascular anomalies resulting in shunting of venous blood into the arterial circulation, (3) 10 congenital cardiovascular anomalies in which there was no abnormal shunting of blood and (4) 3 miscellaneous anomalies (one bicuspid aortic valve, revealed at autopsy, and two cases of vascular malformations of the brain, revealed by cerebral arteriograms).

TABLE 1.—*Congenital Heart Disease in Adults in a Small Cardiac Clinic*

Congenital Anomaly	Age Range, Yr.	No. of Males	No. of Females
Interatrial septal defect	23-75	0	8
Patent ductus arteriosus	24-31	0	3
Arteriovenous fistula-subclavian 1	31	0	1
Anomalous pulmonary venous drainage	23-29	1	1
Interventricular septal defect (isolated)	22-24	1	1
Pulmonary stenosis and infundibular stenosis	16-18	1	1
Pulmonary valvular stenosis with persistent left superior vena cava	25	1	0
Pulmonary valvular stenosis with infundibular stenosis	26	1	0
Persistent left superior vena cava*	25-59	2	2
Bicuspid aortic valve with bacterial endocarditis		0	1
Vascular malformations of brain	36-49	1	1
Totals	16-76	8	19

* Two isolated cases, one of pulmonic stenosis and one of interatrial septal defect.

Lesions Resulting in Shunting of Blood into Right Side of Heart

Interatrial Septal Defect.—The most common cardiovascular anomaly which we have encountered in adult subjects is the interatrial septal defect (table 1). Eight of the 27 patients with congenital cardiovascular anomalies seen in our adult cardiac clinic group had interatrial septal defects. All eight of the patients with interatrial septal defects were women. Six of these women had been through normal labor and had had two to four children each. The hemodynamic data for these female patients are recorded in table 2.

CASE 1.—A 23-year-old woman, gravida 0, had been in attendance in the outpatient clinic for the preceding eight years. The initial admission, in 1945, was because of pneumonitis of the base of the right lung. The patient developed more extensive pulmonary lesions in 1946 along with lymphadenopathy, after which a diagnosis of sarcoidosis was established. The history indicated that she had had unusual fatigue as a child. In 1947, the x-ray of the chest showed some cardiomegaly, but no cardiac symptoms were recorded. In all these examinations, a grade 2 or grade 3 apical systolic murmur and accentuated pulmonic second sound were noted. The history was negative for rheumatic fever. In addition to having sarcoidosis, the patient was thought to have rheumatic heart disease and mitral insufficiency.

The patient was next seen in 1953 because of an enlarged supraclavicular lymph node. The grade 3 apical systolic murmur was still present. The electrocardiogram showed a right axis deviation with an RSR'-QRS complex in lead V_1, typical of the right ventricular diastolic overload pattern. Congenital heart disease was suspected, and, for that reason, cardiac catheterization was done.

The catheterization studies demonstrated evidence of an interatrial septal defect with left-to-right shunt. It was possible to pass the catheter into the left auricle and into the pulmonary veins on both the left and right sides (fig. 1). During cardiac surgery, an isolated interatrial septal defect

TABLE 2.—*Clinical and Hemodynamic Observations in Eight Adult Female Patients with Interatrial Septal Defect*

			Oxygen Saturation, %							Blood Pressure, Mm. Hg		Resistance, Dynes/Sec.	Blood Flow, Liters/Min.			
Case No.	Age, Yr.	Normal Children, No.	Inferior or Superior Vena Cava	Right Auricle	Right Ventricle	Pulmonary Artery	Left Auricle	Systemic Arteries	Hemoglobin, Gm./100 Cc.	Right Ventricle	Pulmonary Artery	Pulmonary Artery	Systemic Arteries	Pulmonary Artery	Left to Right Shunt	Right to Left Shunt
1	23	0	72	81	...	88	86	95	13.5	25/0	24/13	141	3.76	9.51	5.75	....
2	27	4	66	83	...	85	92	96	12.2	24/3	20/6	60	4.33	13.37	9.04	....
3	42	2	61	63	...	65	96	80	11.1	87/1	92/33	888	3.92	1.84	0	2.05
4	75	0	58	53	54	55	...	80	13	86/12	90/34	765	8.61	6.27	....	2.34
5	50	2	69	82	82	85	95	96	12	41/23	.....	110	5.77	23.1	17.3	....
6	25	2	70	88	...	86	...	95	....	23/11	23/4	63	8.87	15.06	6.19	....
7	69	2	65	...	...	77	90	...	....	32/13	.....	...	4.78	5.74	....	....
8	47	0	58	83	...	...	95	85	11.6	86/11	84/33	341	4.26	11.24	7.60	0.85

was demonstrated and closed without difficulty. The case is an excellent illustration of the lack of specificity of physical signs in adults with interatrial septal defect.

Case 2.—The second case is of interest from several points of view. The patient had had four successful deliveries of normal infants without cardiac disability; a sister and a brother died of sudden heart attacks at ages 18 and 21 years respectively; the patient's cardiac abnormality was first discovered radiologically during a mass x-ray survey. The signs on physical examination were not distinctive. There was a grade 1 systolic murmur in the pulmonic area with an accentuated and split pulmonic second sound. The heart was hyperdynamic, especially over the right ventricle.

The x-ray configuration of the heart was of interest in that there was no cardiomegaly, but the left cardiac border in the region of the main-stem pulmonary artery had lost its concavity (fig. 2). The left cardiac border did not show the convex bulging commonly seen in large left-to-right shunts. Figure 3 shows the cardiac configuration at the end of the fourth pregnancy, in 1954. Surgery, under anesthesia by refrigeration, with complete repair of the septal defect, was done in 1955. Figure 4 shows the cardiac configuration 12 months after repair of the interatrial septal defect.

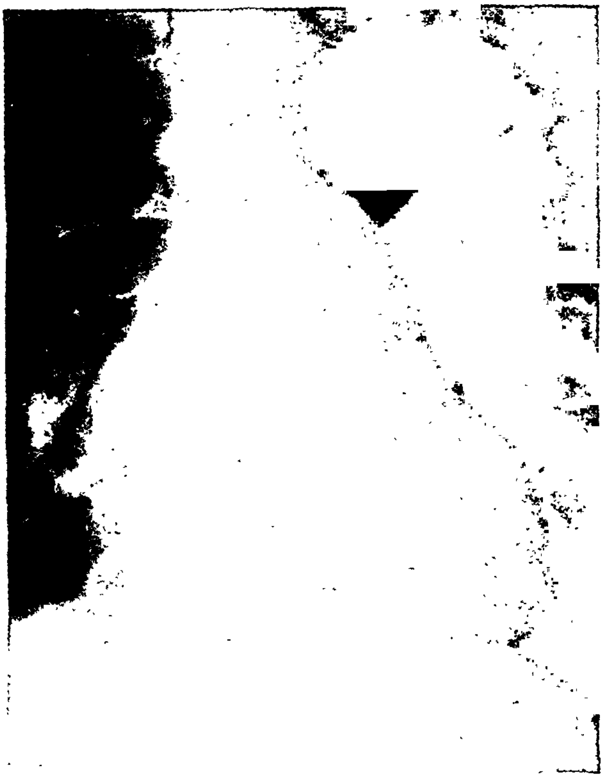

Fig. 1.—Catheter passed through inferior vena cava, seen extending through interatrial septal defect into a left pulmonary vein in patient in case 1.

Patients with interatrial septal defect belong to the "potentially cyanotic" (cyanosis tardive) group. Three of the eight patients had reached this stage. Case 3 is an excellent example (table 2). The cardiac configuration by x-ray was typical as seen in left-to-right intracardiac shunts, and the long-standing history of cardiac abnormality since childhood is compatible with congenital heart disease. These cases of interatrial septal defect after reversal of flow has occurred are difficult to diagnose by catheterization of the right side of the heart, since the oxygen content of the right auricle will no longer show arterialization. In such instances, one can be certain of the diagnosis if the catheter can be passed through the septal defect into the left auricle and pulmonary veins and if, at the same time, one demonstrates significant systemic arterial oxygen unsaturation. Our studies on this patient fulfilled these criteria. In most of our patients with interatrial septal defect, we have been able to pass the catheter through the defect into the left auricle. We have found that this maneuver is much more readily successful in adults if the catheterization is

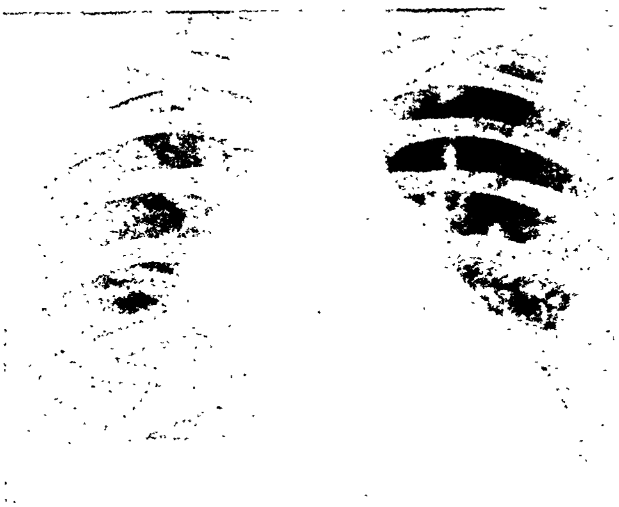

Fig. 2.—Posteroanterior x-ray of chest of patient in case 2 showing prominence of pulmonary artery segments and straight left cardiac border.

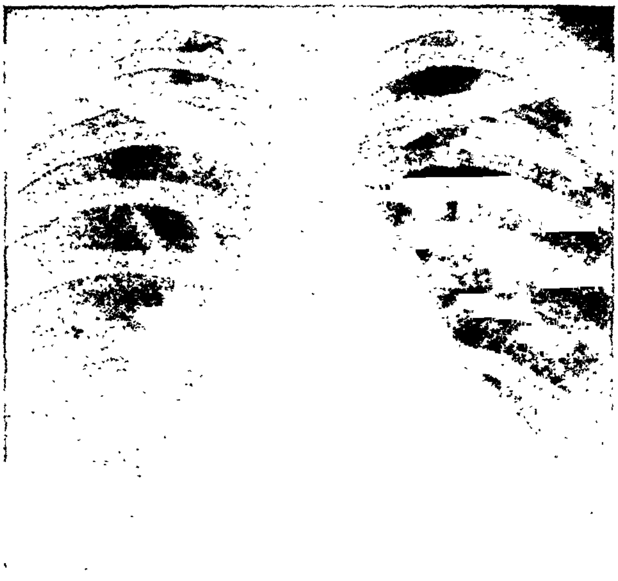

Fig. 3.—X-ray of patient in case 2 immediately after pregnancy. Heart definitely enlarged, with bulging along upper left cardiac border and prominent pulmonary artery segments on both sides.

done through the inferior vena cava via the saphenous vein rather than through the superior vena cava via the antecubital vein (fig. 5).

Some of the significant data on the remainder of the eight patients with interatrial septal defect of this study are listed in table 2. Several features should be emphasized in this group: All of our patients were women; the oldest patient is now aged 75; five of these patients have had two or more successful childbirths without clinical aggravation of the cardiac status; and, finally, this isolated lesion in the adult seems remarkably well tolerated.

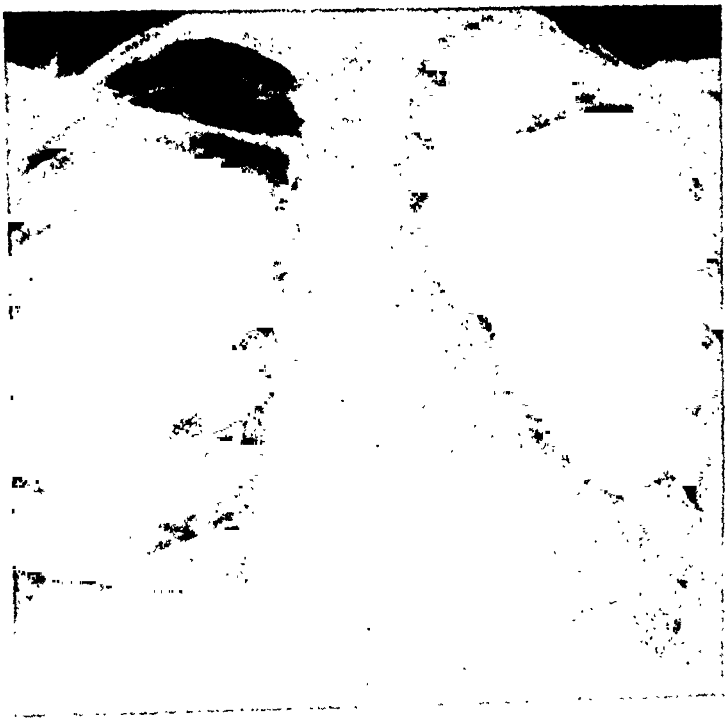

Fig. 4.—X-ray of patient in case 2 one year after repair of interatrial septal defect.

Isolated High Interventricular Septal Defect.—Other types of left-to-right shunts encountered in our patients were isolated high interventricular septal defect, anomalous pulmonary vein drainage, and congenital fistula between artery and vein. In the first two, the x-ray configuration of the heart and pulmonary vessels may give the most distinctive clue of the "left-to-right shunt" diagnosis.

Case 9.—This study includes one patient, a 24-year-old man, who had a high interventricular septal defect (Eisenmenger's complex). He was known to our cardiac clinic from 1940 through 1946, during which time he was considered to have rheumatic heart disease. The developmental history in this patient indicated cardiorespiratory difficulty at three months of age. It was noted that the patient cried excessively, regurgitated milk, and had some pulmonary findings which led his local physician to a diagnosis of "asthma." The patient did, however, appear to develop normally. The mother noted that the child, at the age of 5 to 7 years, was unable to run and play actively as other children but would always stop and rest in the midst of active play. From about age 10 to 22, the patient noted ease of fatigue, shortness of breath on exertion, occasional precordial pain, and occasional dizziness.

In September, 1954, while patient was attending a large midwestern college, he developed a "severe chest cold." An x-ray was taken, and the patient was advised to withdraw from school because of "pulmonary tuberculosis." He returned to Washington and came to the cardiac clinic a after eight years' absence. Immediately, after a review o current and previous x-ray film of the chest had been m congenital heart disease with left-to-right shunt was s pected. It was thought that the most likely diagnosis was interatrial septal defect.

The clinical examination demonstrated the patient to well developed and well nourished. His blood pressure w 105/55 mm. Hg. His heart rate was 82 per minute w normal rhythm. The apex beat was diffuse and located at anterior axillary line, sixth interspace. The second pulmon sound was accentuated. There was a grade 3 systolic mur over the entire precordium that was loudest toward the ap The electrocardiogram showed signs of left ventricular hyp trophy and evidence of myocardial damage. The arm-tongue circulation time was 11 seconds. The hemoglob level was 12 Gm. per 100 cc. and hematocrit reading 37 X-ray examination of the chest showed advanced cardi megaly, prominent pulmonary arteries, and a small aort knob (fig. 6). Catheterization of the right side of the hea was performed on two separate occasions. The data obtain are listed in table 3.

An attempt was made to exclude the possibility of aortic pulmonary septal defect by a study of the pressures a blood gases as obtained by retrograde passage of a p ethylene catheter via the femoral artery into the aortic arch. This maneuver successfully excluded the possibility in that we were able to pass the catheter from the aorta into the pulmonary artery but only after the catheter had passed from an aortic pressure area of 102/56 mm. Hg through a low diastolic pressure area of 102/5 mm. Hg. From all data collected on this patient, a diagnosis of high interventricular septal defect with left to right shunt was established.

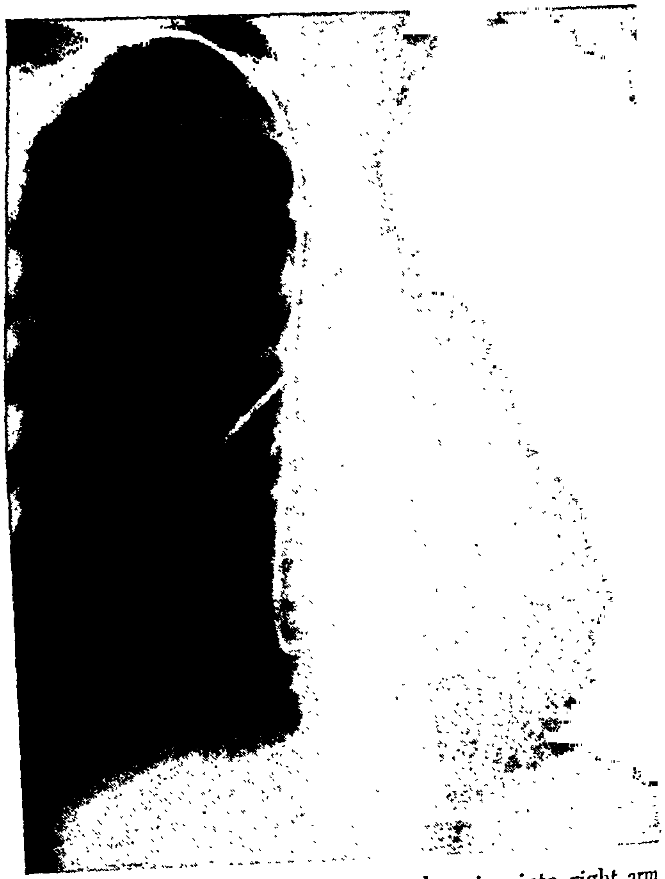

Fig. 5.—Catheter passed through veins into right arm of patient in case 3 could not be made to enter interatrial septal defect. Catheter shows in right ventricle and pulmonary artery.

Anomalous Pulmonary Venous Drainage.—Pulonary veins, instead of draining into the left rium, may have an anomalous entrance into the ght atrium or into one of the many systemic veins. his anomalous pulmonary venous drainage may be tal, in which all the pulmonary veins enter the ystemic venous circulation. In some instances, here is a complex congenital anomaly including nteratrial septal defect or patent ductus arteriosus. n the other hand, anomalous pulmonary venous rainage may be partial in which one or more pulonary veins drain into the systemic venous cirulation. In this latter group there may be few, f any, symptoms. Two cases of partial anomalous ulmonary venous drainage in adults were enountered in this study.

CASE 10.—The first patient with partial anomalous pulonary venous drainage was a 24-year-old woman, gravida . She complained of persistent tiredness and occasional izziness. Her family history was of interest in that a younger rother with frequent respiratory infection had been demontrated to have a congenital pulmonary anomaly consisting of bsence of the middle and lower lobes of the right lung. The osteroanterior chest film demonstrated pulmonary vascular narkings suggestive of anomalous pulmonary vein drainage. his was confirmed by an angiocardiogram. Venous catheerization demonstrated arterialization of venous blood in the nferior vena cava at the level of the diaphragm. The oxygen aturation in the systemic veins and brachial artery was as ollows: superior vena cava, 66%; inferior vena cava (below iaphragm), 76%; inferior vena cava (entrance to right uricle), 83%; high in the right auricle, 68%; hepatic vein, 8%; and brachial artery, 98%.

The second patient with partial anomalous pulmonary venous drainage was found to have an unuspected drainage of the left upper lobe into the eft innominate vein. This was demonstrated by etrograde filling during standard angiocardiography but only during forced expiration.

ABLE 3.—*Data After Catheterization of Right Side of Heart n Patient with Isolated High Interventricular Defect (Case 9)*

	Blood Oxygen Saturation, %	Blood Pressure, Mm. Hg	Blood Flow, Liters/Min.
uperior vena cava.......	60	7	...
Right auricle	60	6	...
Right ventricle (low)......	60	116/15	...
Right ventricle (high).....	60	116/15	...
ulmonary artery.........	84	115/43	9.97
ystemic arteries..........	90	116/72	5.26
ntracardiac shunt (arteriovenous)...	..	...	5.50
ntracardiac shunt (venoarterial)....	..	...	0.96

Patent Ductus Arteriosus.—Three cases of patent luctus arteriosus, all in females, were found in the tudy. One patient was admitted with bacterial ndocarditis. She was operated on elsewhere and ias made a complete recovery. The other two paients are asymptomatic and have refused surgical herapy.

Congenital Arteriovenous Fistula.—One patient n this study was demonstrated to have an arteriovenous fistula between the left subclavian artery and ein. The history was negative for trauma or other etiological factors which might have produced an acquired lesion. The location and character of the murmur suggested patent ductus arteriosus. This case has been reported in detail elsewhere.[1]

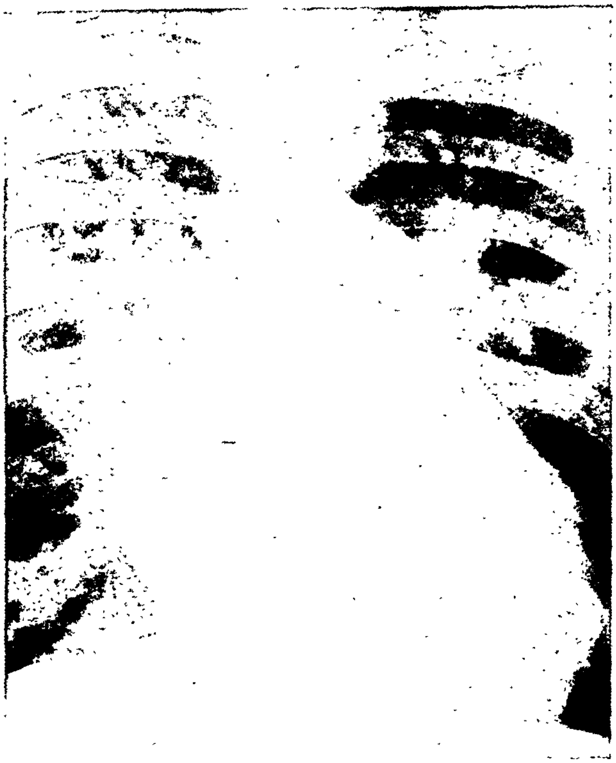

Fig. 6.—Cardiomegaly, prominent pulmonary artery segments bilaterally, and small aortic knob in high interventricular septal defect of patient in case 9.

Patients With Congenital Cardiovascular Anomalies Without Abnormal Blood Shunts

Persistent Left Superior Vena Cava.—Persistent left superior vena cava has been surprisingly frequent in the cases reported in this study. Four cases were found. Two of these cases were associated with other major anomalies. In case 5 (table 2), reported in detail elsewhere,[2] the patient had a large interatrial septal defect. Another case was that of a male with pulmonary valvular stenosis. In the other cases, the persistent left superior vena cava was an isolated congenital anomaly. One of these was quite spectacular in that the persistent left superior vena cava did not drain into the coronary sinus as usual but descended below the diaphragm and drained into the left iliac vein. The arm-to-tongue circulation time on this patient was 30 seconds when the left antecubital vein was used and only 15 seconds when the right was used.

Congenital Vascular Malformations of the Brain.—When one speaks of congenital cardiovascular anomalies, it seems to be generally understood that only the heart and great vessels are envisioned. It is important, since congenital cardiovascular anomalies may involve vascular structures in any part of the body, that our thinking embrace the total cardiovascular system. For this reason, two cases of congenital vascular malformations of the brain are presented.

Several miliary aneurysms have been demonstrated in our laboratory during the course of this study but are not included here. We are presenting the cases of two patients with large symptomatic arteriovenous communications in the brain demonstrated by cerebral arteriography. Both of these patients have been successfully operated on.

The first patient was a 42-year-old woman (fig. 7) who had irregular episodes of "blackouts" dating back to age 18. In June, 1956, after a two-year free period, she experienced her first convulsive seizure with temporary loss of consciousness. The second patient was a man, aged 32, who had a long history of headaches. On the day of admission he found himself on the floor with thick speech and hemiparesis on the left. The congenital vascular anomaly of the brain was well demonstrated by cerebral arteriogram.

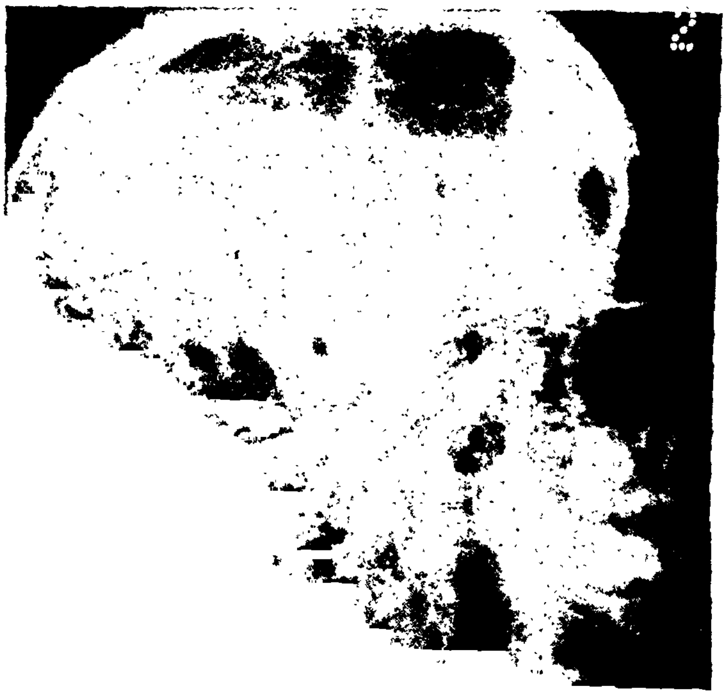

Fig. 7.—Cerebral arteriogram, left lateral view, showing arteriovenous aneurysm in parietal lobe.

Bicuspid Aortic Valve with Bacterial Endocarditis.—Several congenital malformations have been discovered from our medical service at postmortem examination. Most of these patients had not been under study previously in our clinic. One patient from the autopsy group is included who had been under study. This patient, with bacterial endocarditis, was demonstrated to have a bicuspid aortic valve. Bacterial infection of bicuspid aortic valves is not uncommon.

Comment

That the incidence of recognized congenital heart disease has increased appears generally accepted. White,[3] comparing similar clinical material in 1925 and 1950, noted a sevenfold increase in congeni heart disease in the New England area. In a stu by Hutcheson and others,[4] reported from a cli in the southern United States, a tenfold increas of congenital heart disease is noted in their stud of etiological types of heart disease.

It is not unexpected that in large medical center well-known for surgical therapy of congenital hear disease, increasing numbers of patients with co genital cardiovascular disease are being admitte for study and surgical therapy. Data concerning th general incidence of congenital cardiovascular di ease from such centers may well be weighted i favor of the incidence of congenital anomalies.

Our study appears to have two significant fe tures. It comes from a small hospital with a mo erate-sized hospital population—60 beds in t department of internal medicine and an average 100 patients registered in the outpatient cardi clinic, and it deals exclusively with adults. W like many other physicians, had formerly considere congenital heart disease in clinical practice essentially a disorder of infants and children. As a resul of the experience herein reported, we believe tha the cardiovascular division in a general medica service should be as alert as the pediatric servic to the possibility of congenital cardiovascular dis ease in the etiological diagnosis of heart diseas

The importance of the radiologist in making th initial diagnosis of congenital cardiovascular di ease in adults seems not to have been fully appr ciated. Radiological signs of anomalies are ofte present on routine diagnostic roentgenograms of th chest. If he is sufficiently alert to the particul features of the configuration of the heart, the rad ologist will suspect the possibility of a congenit cardiovascular lesion. His report to the referrin physician in suspect cases, accordingly, should carr his recommendation for a complete cardiovascul evaluation of such nature as to delineate congenit anomaly. In adults with long-standing cyanoti heart disease or with congenital anomalies pro ducing characteristic signs such as are seen in pul monic stenosis, patent ductus arteriosus, an coarctation, the diagnosis of congenital cardiovas cular disease should be readily suspected if it ha not been determined previously from a caref physical examination.

The majority of the patients in our study had left-to-right shunt anomalies with murmurs which were not pathognomonic of congenital anomaly. The typical record in these cases indicated the presence of a grade 2 or 3 systolic murmur either at the base or apex, negative history for clinical rheumatic fever, moderate cardiomegaly, and, with occasional exceptions, no history of frank episodes of heart failure. The clinical diagnosis previously made was rheumatic heart disease with mitral insufficiency. In these patients the configuration of the heart and great vessels caused us, for the first time, to suspect congenital anomaly as the etiological type of heart disease. For the "new cardiac," it is desirable that the cardiovascular staff utilize the opportunity to review the chest x-rays in conference with the radiologist. Many congenital cardiovascular anomalies will be discovered, or at least suspected, in these conferences.

It should be pointed out that in the left-to-right shunt anomalies in adults, with their lack of pathognomonic murmurs, the electrocardiogram may be of great value. The use of the diastolic overload pattern of the right ventricle as described by Sodi-Pallares and Marsico,[5] in conjunction with the clinical findings, is particularly important.

The high incidence of women in this group of patients was unexpected. In Abbott's[6] series, the sex ratio was, females to males, 1:1.2. Females predominate in some series of individual lesions—notably, interatrial septal defect, where the ratio of females to males is 4:1 (Bedford and associates[7]), and patent ductus where it is 2.3:1 (Gross[8]).

Summary

Twenty-seven cases of congenital cardiovascular lesions were discovered on routine admission to a small adult cardiac clinic during the past five years. Although the number of cases is small, it is significant in that the types of congenital anomalies represented are now, in most instances, curable by cardiovascular surgery. These studies emphasize the importance of becoming familiar with techniques for making an accurate diagnosis of congenital heart lesions and indicate that congenital heart disease may be far more important as a basis of heart diseases in adults than was formerly recognized.

Of the regular clinical diagnostic procedures usually employed in a cardiac clinic, the roentgenographic configuration of the heart and great vessels was of particular importance in those cases where the clinical diagnosis was obscure. Accordingly, the strategic position of the radiologist in the detection of cardiovascular lesions is evident. His alertness in recognizing possible congenital cardiovascular lesions on the basis of the configuration of the heart and great vessels, as seen in routine posteroanterior chest roentgenograms, may be the initial clue to an accurate diagnosis of congenital heart disease. Left-to-right shunt anomalies were the commonest type of lesion seen in this group of 27 patients. Eight of the lesions were interatrial septal defects—all in women.

Addendum

Since this paper was submitted for publication, two additional types of major congenital cardiac anomalies have been encountered in our clinic. It was noted that all eight cases of interatrial septal defects in our original series were in women. Our first case in a man was recently studied. He is a 42-year-old robust laborer with a history of shortness of breath as a child but no history of cyanosis. During his adulthood he had very little shortness of breath until about one year before admission, when shortness of breath became more distinct but not sufficient to incapacitate him from work as a laborer. The cardiac surface area was 196% normal. During catheterization of the right side of the heart, the oxygen saturation in the superior vena cava, right auricle, right ventricle, pulmonary artery, left ventricle, and brachial artery was 60, 82, 90, 90, 96, and 95% respectively. The corresponding pressures were 10, 11, 43/11, 40/25 and 124/11 and 124/76 mm. Hg. The catheter entered the left ventricle so persistently that it was difficult to guide it from the right ventricle into the pulmonary artery. These data were interpreted to indicate a probable diagnosis of persistent common atrioventricular canal (partial form).

At operation in September, 1957, the patient was found to have a large interatrial defect (ostium primum defect), a cleft mitral valve with a forceful regurgitant jet, and a very small defect in the ventricular septum. The cleft mitral valve was closed by direct suture and the septum primum defect with a nonabsorbable polyvinyl sponge (Ivalon) prosthesis. This case is an excellent example of a major congenital cardiac anomaly compatible with excellent physical development, good cardiac function even with hard work, and yet with the onset of significant cardiac symptoms only after age 40 years.

The other cardiac anomaly recently seen in our clinic was our first case of cyanotic congenital heart anomaly in an adult. The patient is a 40-year-old housewife with a history of cyanosis since birth. She has always had some limitation of physical activity and ease of fatigue. There was no history of congestive heart failure. Respiratory infections have represented a serious hazard, resulting in extreme cyanosis and shock; one such episode was responsible for the patient's present admission to our clinic.

After the patient's recovery from the respiratory infection, examination of the heart showed a diastolic shock at the aortic area with accentuated second sound in both aortic and pulmonic areas. A loud machinery murmur with systolic accentuation was present from the level of the left clavicle down to the fourth interspace on the left. It was also present on the left side of the chest posteriorly at the level of the seventh and eighth ribs. During cardiac catheterization the aorta was invariably entered from the outflow tract of the right ventricle, and at no time was it possible to enter the right or left pulmonary artery. The oxygen saturation in the right atrium and lower right ventricle was 60%. The saturation was 74% just above the semilunar valve, descending aorta, and brachial artery. The hemoglobin level was 18.5 Gm. per 100 cc. A retrograde aortogram demonstrated a very large vessel at the level of the ascending aorta. No main-stem pulmonary artery was demonstrable, and the right pulmonary appeared to have origin from the ascending aorta, just proximal to the arch. A diagnosis of persistent truncus arteriosus was made. An effort is to be made to prevent or control respiratory infections, but surgical therapy was not recommended.

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This study was supported by grant-in-aid from the National Institutes of Health.

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OPEN REPAIR OF ATRIAL SEPTAL DEFECTS

RESULTS IN SIXTY-THREE PATIENTS

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and
Fouad A. Bashour, M.D., Minneapolis

Surgery is indicated for most patients with atrial septal defects, and, with but few exceptions, the defect is surgically correctable. Once the diagnosis has been made, all patients with symptoms should have an operation, with the exception of those with pulmonary hypertension grave enough to produce a shunt principally from right to left, rather than the usual left-to-right shunt, and with the probable exception of those with low defects. There are a number of possible techniques to perform this surgical procedure; nonetheless, the current trend favors open rather than closed operations.

Through the work of many individuals, atrial septal defect is now, with but few exceptions, surgically correctable. Successful operations are done with a low mortality rate, and surgery is indicated for most patients with the disease. Our experience with the surgical treatment of this defect now goes back approximately five years[1] and encompasses 63 patients who have all been operated upon by a method employing cardiac inflow occlusion and direct-vision repair with the aid of hypothermia. The method is reliable, and the results so far achieved have been gratifying. A report of some observations we have made concerning this defect and a description of the results we have attained with surgery may be of interest to physicians who encounter patients with the disease.

Pathological Anatomy

The embryologic growth aberration which leads to these defects may produce several distinct anatomic types. We have classified the defects into four types: foramen ovale, high, continuous, and low.[2] This clas fication omits the "probe patency of the foram ovale," which is quite common but clinically insig cant unless a high right atrial pressure, as in pul nary stenosis or tricuspid atresia, results in a right- left shunt. The developmental mechanics of t

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oramen ovale defects, at least, are quite well undertood,[3] though the basic etiology remains vague, as it loes for most congenital abnormalities.

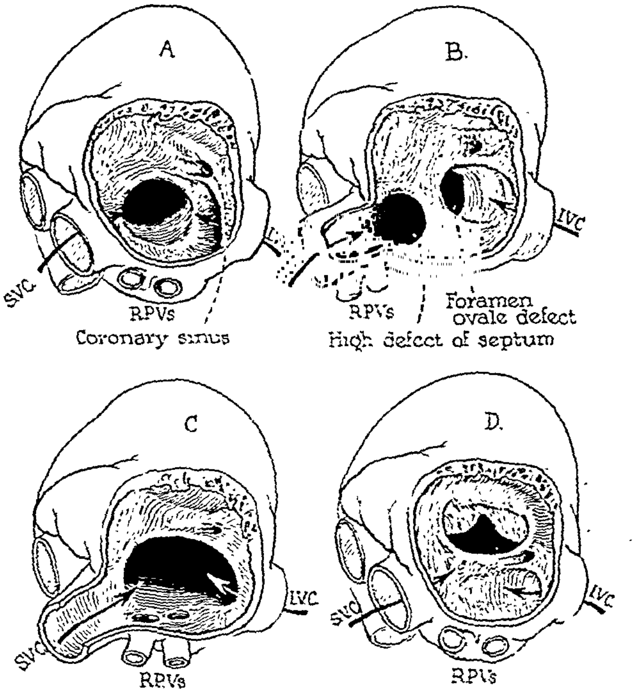
In discussing atrial septal defects it has been :ommon to speak of them simply as either "ostium 'ecundum" or "ostium primum" defects, while the robe patency defect, which remains closed during ıormal intracardiac dynamics, is called a "foramen ›vale" defect. It is true that both the high and foramen ›vale defects of our classification are openings through :he ostium secundum of the septum primum, and they :ould, therefore, be thrown together as "ostium ;ecundum" defects. We feel, however, that there are mportant differences between the patent foramen ›vale and the high defect which require a separate lesignation. Certainly, these defects can be differ-ntiated anatomically with no confusion, once the ›bserver is aware of the differences, and it is quite likely that catheterization techniques can be devel›ped to differentiate them preoperatively. From the surgeon's point of view preoperative differentiation would be valuable, for the problem of repair is not the same. Repair is more difficult in the high defects.

The commonest, by far, of the types we have listed is the foramen ovale defect (see the figure, part *A*). Forty-eight (76%) of our 63 patients have had this type of defect. The defect is usually caused by excessive resorption of the septum primum, which normally forms the valve of the foramen ovale. It has fairly good margins and is at a safe distance from the conduction system of the heart, and repair is straightforward with a running suture of silk plus some reenforcing interrupted stitches.

The second type of defect, and the type we have encountered second most often (10 patients), has been the high defect (see the figure, part *B*). It has not always been clearly differentiated from the foramen ovale defect, but it should be and it can be. Located just below the entrance of the superior vena cava, this defect has at times been designated as an abnormal entrance of the superior vena cava into both left and right atriums.[4] It is invariably associated with partial anomalous pulmonary venous drainage. In every case the vein of the right upper lobe and, in some cases, the vein of the right middle lobe, enters the superior vena cava just above the defect. The defect may occur in the same heart with a foramen ovale defect; we have encountered this double defect 3 times among the 10 patients with high defects. The high defect is well separated from the conduction system, but repair is difficult because of its relationships to the superior vena cava and the pulmonary veins.

A third type of defect, illustrated in part C of the figure, we have designated as a continuous defect. Though we have only encountered this defect once, it appeared to be a continuous defect formed by joining a high defect and a foramen ovale defect—as if the band of septum shown between the two defects in part *B* of the figure had disappeared. This defect has probably been called "complete absence of the septum" by some authors, though some septal tissue remains around the edge. Repair is difficult, but the one patient we have operated upon shows no evidence of a remaining shunt on postoperative catheterization.

The fourth group—the low defects—are again a distinct group anatomically which can be differentiated from the foramen ovale defects, though both types of defect can occur simultaneously in the same heart. These defects form a complex group, all of which, as Edwards has pointed out,[5] show some evidence of a persistent common atrioventricular canal. The most severe type, often designated as a common atrioventricular canal defect, actually has a type of ventricular septal defect between the common atrioventricular valves and the crest of the ventricular septum as well as the atrial septal defect. In the less severe type, shown in the figure, part *D*, there is an atrial septal defect due to persistence of the ostium primum, but the common atrioventricular valves have matured to form mitral and tricuspid leaflets, though a variable degree of notching and deformity remains. The passage below these cusps that forms the ventricular septal defect in the more severe defects is not present. Distinction between this less severe type and the more complete defect may not always be easy even at an open operation, but it should be made, if possible, especially in reports of operative accomplishment, because the atrioventricular canal defect is much more difficult to repair than the persistent



Principal types of atrial septal defects as seen from the right side. The patient's head is to the left. *A*, foramen ovale defect; pulmonary veins enter normally. *B*, high defect with additional small foramen ovale defect; right pulmonary veins drain anomalously into superior vena cava. *C*, continuous defect of both high and foramen ovale types. *D*, persistent ostium primum (type of low defect); foramen ovale is closed.

ostium primum defect. The proximity of the atrioventricular node and the bundle of His at the lower margin of the defect makes any surgical repair hazardous. Fortunately, these defects are less common than the first two types. We encountered only three persistent ostium primum defects among 63 patients, though four additional atrioventricular canal defects, not reported here, have also been operated upon by us.

Characteristically, these low defects have a congenital mitral valve deformity, usually a notching of the aortic leaflet in the persistent ostium primum type. In addition, acquired mitral valve disease, on a rheumatic basis, may occur with any atrial septal defect. We have encountered this complication in five patients, all of whom had foramen ovale defects. In our experience, mitral stenosis, when detected by palpation through the atrial septal defect, is not as severe as it is in hearts with uncomplicated mitral stenosis, and some degree of insufficiency seems to be common.

Indications for Surgery

Once the diagnosis has been made, an operation is indicated in most cases. Pulmonary hypertension grave enough to produce a shunt principally from right to left, rather than the usual left-to-right shunt, denotes inoperability at present, but all other symptomatic patients with sound diagnostic evidence of an atrial septal defect should have an operation.

Operative Technique

A number of closed techniques have been devised to repair these defects, but we will not describe them, for we have only had experience with an open method of repair employing hypothermia. With the patient under deep anesthesia with thiopental sodium and gallamine (Flaxedil) triethiodide, the body temperature is lowered by surface cooling to about 29 C (84.5 F). An automatic respirator is used during cooling and until late during rewarming to administer 5% carbon dioxide in oxygen through a semi-open system. With an automatic respirator, dangerous shifts in blood pH are avoided, and, when 5% carbon dioxide is used, the pH does not reach high levels at the lower temperatures as it does if oxygen alone is used with our respirator.

The heart is exposed through an anterior, transverse incision, with both pleural spaces entered, and, after exploration of the chambers by insertion of a finger through the right atrial appendage, preparations are made to do the open cardiotomy. Total cardiac inflow and outflow are occluded, and the right atrium is opened widely to expose the septal defect in a bloodless field. The defect is usually closed with a running stitch of silk oversewn with additional interrupted stitches. After the right and left atriums have been filled with saline solution or blood, the cardiotomy wound is closed with a clamp and circulation restarted. The atrial wound is then repaired over the clamp. Occlusion time has averaged four to five minutes. Once the chest wound has been closed, the patient is immersed in a bath of hot water until his body temperature has reached 34-35 C (93-95 F).

Clinical Material

We have performed the operation described in 63 patients in all. Forty-eight of these patients had foramen ovale defects, in 10 the defect was high, in 1, continuous, and in 3, low (all of the low defects were persistent ostium primum defects). One patient had a defect of unknown type. Of the 63 patients, 45 (71%) were females and 18 (29%) males. The age range was from 3 to 61 years, with a median age of 23. Forty-five of the patients were adults (over 16), 10 were over 40, and 5 were over 50.

There were six operative deaths in this series. Though the mortality rate is 9.5% for the entire series of 63 patients, it is lower for the more recent operations. The last 19 consecutive operations have been done without a death. Operative deaths were due to a variety of causes. One early death was the result of a technical error that led to a tear in the left atrium and death on the operating table. One patient with a persistent ostium primum defect, who had a complete atrioventricular heart block after surgery, died suddenly on the third postoperative day, presumably of cardiac standstill. No cause of death was found at autopsy. One patient died of unrecognized postoperative hemorrhage. One patient with pulmonary hypertension and severe pulmonary arteriosclerosis died of acute failure of the right side of the heart on the operating table, after the defect had been repaired. Finally, there were two operative deaths due to irreversible ventricular fibrillation.

These various causes of death threaten the patient less now than they did earlier. Ventricular fibrillation, for example, is much less frequent. We have operated upon 30 patients since changing to the respiratory system described above, which employs an automatic respirator, with only 2 instances of ventricular fibrillation; among the first 33 patients, in whom a manual respirator was used, there were 11 instances of ventricular fibrillation.

Intracardiac operations are obviously more formidable in older patients than they are in children, yet this operation to repair atrial septal defects has been used successfully for a group of patients most of whom were adults. The oldest patient (61) was a survivor. Age has not specifically limited the usefulness of the operation, nor has size. Though hypothermia, or any other open heart technique, for that matter, is easier to use in the small individual than in the large one, we have operated successfully on patients weighing as much as 195 lb. (88.5 kg.). The operation can be done without great risk in a variety of patients. In most cases it is also successful, for the defect appears to remain closed.

Of the 63 patients operated on, 6 died and 14 were operated on less than six months ago or have not been seen recently. Of the remaining 43 patients, 39 showed ostoperative clinical improvement and 3 became orse; in one patient, repair was not done at surgery. hus, clinical improvement, with gain in strength and igor and often a gain in weight, has been observed n most of the patients who have been seen six months r more after their operation. One clinical failure was n a patient with a persistent ostium primum defect vho died suddenly after cardiac catheterization one ear after the operation. She had suffered complete eart block since shortly after surgery and subacute acterial endocarditis shortly after that, and her reair was found to be broken down at autopsy. A econd failure was in a 7-year-old boy who also had a ersistent ostium primum defect. He developed comlete heart block shortly after surgery and still has it wo years later, though his general condition is good t the time of writing. He has not yet had postoperaive catheterization. Another clinical failure was in a 1-year-old woman who had mitral insufficiency as vell as an atrial septal defect. She is in congestive eart failure at the time of writing, a year after surgery, as she was before her operation. With these few xceptions, the surviving patients have apparently een helped by the operation. X-rays characteristically how a striking decrease in the pulmonary vascular narkings postoperatively and a variable decrease in eart size, though the heart contour has not usually ecome completely normal.

Postoperative Cardiac Catheterization.—Evidence btained at cardiac catheterization several months fter surgery also shows that the treatment has been uccessful in most instances. We have tried to catheerize all of the earlier patients, and have so far missed nly 3 among the first 29 survivors. In total, postperative catheterization has been done on 30 patients, nd there is evidence of a remaining shunt in only 2 (based on the criterion that a 2 vol.% increase in xygen saturation between the venae cavae and right trium is needed to diagnose a left-to-right shunt at he atrial level). One of these was the patient with a ersistent ostium primum defect mentioned above. The other was a patient who had the first high defect ve encountered, and in him we had missed the nomalous pulmonary vein. This patient has only a mall shunt remaining, and there was good clinical mprovement.

Many of the patients had progressed to the stage of pulmonary hypertension by the time that the operation vas done, so it was gratifying to find that the hyperension disappeared after surgery in most of them. A ystolic pulmonary artery pressure of 35 mm. Hg or greater was present preoperatively in 29 of the 54 patients in whom we had adequate preoperative neasurements. In 15 of these patients there were adequate postoperative measurements, as well, and the pressure had fallen to normal in 12. Of the three in whom the pressure was still elevated, it had fallen almost to normal (35/18 mm. Hg) in one, was still as high as it had been preoperatively in another, and was higher than it had been preoperatively in the third. These last two patients both had concomitant mitral insufficiency, apparently on a rheumatic basis. One of these two was the patient mentioned earlier who had no clinical improvement, while the other, who had also been in chronic congestive heart failure preoperatively, has gained striking clinical improvement. All three of these patients apparently had closed defects postoperatively.

Five of the patients with elevated pulmonary artery pressure had pressures over 80 mm. Hg systolic preoperatively. The highest pressure was 110 mm. Hg, in a survivor. In these patients the risk may be greater, but surgery is not contraindicated. Four of the five survived their operation. We have postoperative catheterization data on only one of these four survivors, the patient, mentioned above, who has mitral insufficiency and a persistence of the elevated pressure.

A finding on catheterization that may be confusing in these patients is an apparent pulmonary stenosis. The pulmonary artery systolic pressure was found to be 10 mm. Hg or more below that of the right ventricle in 12 of the 44 patients in whom adequate measurements were available. This abnormal pressure differential had disappeared postoperatively in the six patients for whom we had adequate measurements. Yet none of the patients who had this finding preoperatively had valvular operations at the time of surgery. Doubtless. this apparent stenosis is merely secondary to the large pulmonary blood flow.

Results of Preoperative and Postoperative Studies of Dynamic State in Fifteen Patients Undergoing Open Repair of Atrial Septal Defects

		Maximum	Minimum	Mean
Pulmonary blood flow, liters/min...	Preoperative	22.6	7.4	16.2
	Postoperative	9.4	4.3	6.3
Pulmonary resistance, dynes cm.$^{-5}$ sec.	Preoperative	133	55	95
	Postoperative	701	39	233
Blood oxygen saturation in pulmonary artery, %	Preoperative	95	81	89
	Postoperative	85	71	79

Studies of Dynamic State.—The postoperative studies in 15 of the patients have allowed a more detailed comparison of the dynamic state at that time with the conditions existing prior to surgery. In all except one of the 15 patients the mean pulmonary artery pressure had dropped postoperatively. This was the patient with mitral insufficiency, mentioned above, who had a higher pressure postoperatively than preoperatively.

The table gives the values for pulmonary blood flow in liters per minute both preoperatively and postoperatively in these 15 patients. It should be emphasized that these are merely estimates of pulmonary blood flow, since there are many errors in the application of the direct Fick principle to the determination of blood flow. Certainly, the decrease in pulmonary blood flow of approximately 10 liters per minute is a significant observation, and it is, in fact, the most important hemodynamic change observed in this group of patients. The final average value of 6.3 liters per minute of pulmonary blood flow is well within the normal limits determined in this laboratory.

Once the pulmonary blood flow and the mean pulmonary artery pressure have been determined, it is possible by mathematical means to arrive at a value for the total pulmonary vascular resistance as expressed in terms of dynes cm.^{-5} sec. The table shows the pertinent data and illustrates the fact that the preoperative pulmonary vascular resistance in this group of patients was approximately one-half the normal value, whereas postoperatively the average value tended to be approximately normal. There was a significant increase in the pulmonary vascular resistance after surgery, which was perhaps somewhat unexpected.

A clue to the reason for the postoperative increase in pulmonary vascular resistance can perhaps be related to the findings in the table that show the oxygen saturation values for pulmonary artery blood preoperatively and postoperatively. It is noted that the pulmonary blood saturation was approximately 90% preoperatively and approximately 80% postoperatively. It is known that patients with pulmonary hypertension will have a decrease in the pulmonary vascular resistance and consequently a drop in the pulmonary artery pressure upon breathing 100% oxygen for a few minutes. It would appear that the patient with an uncorrected atrial septal defect is in some respects comparable to the individual breathing 100% oxygen in that the pulmonary artery blood saturation is much higher than normal, and this factor in itself may be partially responsible for the low resistance in the pulmonary circuit preoperatively. The reduction in the pulmonary artery blood oxygen saturation postoperatively may be in part responsible for the elevation in resistance in the pulmonary circuit that has been noted.

All of the observations made in this subgroup of 15 patients who were studied in some detail indicate a return toward normal insofar as pulmonary artery pressure, pulmonary artery blood oxygen saturation, pulmonary vascular resistance, and pulmonary blood flow are concerned. This would seem to be objective evidence to support the idea that closure of atrial septal defects is a worthwhile procedure.

Comment

At the present time, both closed and open techniques are being used to repair atrial septal defects. Results as good as or better than those reported here have been obtained by Swan and associates[6] using an open technique with hypothermia and by Kirklin and co-workers[7] using a closed technique with the well described by Gross and others.[8] As yet, extracorporeal oxygenators have not been used to repair many such defects, but more reports describing this open method of repairing atrial septal defects are certain to appear. In fact, the first successful use of an extracorporeal pump-oxygenator was to repair an atrial septal defect.[9] A surgeon starting in this field and now offered a number of possible techniques, each of which apparently works in the hands of its advocates, may wish for a clear-cut decision in favor of one method. Unfortunately, there is none at present and there may not be one for some time yet. The one best method has not always been quickly evident in surgery. As an illustration operations for peptic ulcer have been employed for over 60 years but there is still no single generally accepted method. In the surgery of atrial septal defects, too, several techniques may find a place. Nonetheless, the current trend which we heartily endorse, favors open rather than closed operations. If open operations are preferred we can recommend the technique we have described for it allows open repair of the defect in a truly bloodless field, without complex equipment, without a special team of assistants, and without special blood donors. The mortality rate has been low, and the rate of success has been high. Until extracorporeal pump oxygenators, perhaps in combination with hypothermia, can be employed in adults with greater ease and safety than at present, hypothermia probably offers the best way to repair these defects.

Despite the satisfactory results which have so far been achieved, several problems related to the repair of these defects trouble us. The low defect presents a special hazard to repair because of possible conduction system injuries and because of the associated valvular incompetence. Fortunately, these defects are relatively uncommon, and in most instances they can be differentiated from the more simple atrial defects preoperatively.[10] Thus, the physician could, with some justification, elect to withhold surgery for the present. If an operation is needed, however, repair can be accomplished while the stitches are kept away from the conduction system, if sufficient care is exercised. The defect may be closed with a running stitch or with a patch of Ivalon. Sutures alone may prove to be satisfactory for the persistent ostium primum defect, but with the more complex atrioventricular canal closure an Ivalon patch, as described by Kirklin and others,[11] is doubtless better. Satisfactory correction of the extensive valve deformity in this latter defect is a formidable problem. The thin valvular tissues do not take a suture repair well. Nor, for that matter, does the abnormally thickened valve found in patients who have an associated rheumatic mitral valvular disease. When pure stenosis exists in these patients along with the atrial septal defect, a finger commissurotomy through the atrial septal defect may be good enough, but there may be some degree of insufficiency—often unrecognized preoperatively—and surgery for insufficiency is not yet quite good enough.

The complication of pulmonary hypertension is another problem encountered in these patients, as it is, to varying degrees, in patients with other left-to-right shunts. Ideally, surgery for this defect should be done before significant pulmonary hypertension ensues, but the risk, in our series, does not seem to be unduly high (one death in five patients with pulmonary systolic pressures over 80 mm. Hg), provided that the shunt is still from left to right. When the hypertension is due chiefly to the increased blood flow through the pulmonary circulation, it will drop after closure of the defect. We do not know, however, how effective the operation will be when significant changes in the pulmonary arterioles have occurred before surgery. More information regarding this point will come as more postoperative cardiac catheterization studies are done.

Summary

Among the 63 patients upon whom we have operated for atrial septal defects, foramen ovale defects have been the most frequent type, with high defects the second most common. Hypothermia provides an effective technique for repairing these defects in an open field with a low risk and a high rate of success. There were six operative deaths in the total group, with no operative deaths in the last 19 patients. At the present time, the most difficult problems in the treatment of this disease are provided by patients with low defects, patients with concomitant mitral insufficiency, and patients with high levels of pulmonary hypertension.

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This study was supported by a grant from the United States Public Health Service.

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PEREGRINATING PROBLEM PATIENTS—MUNCHAUSEN'S SYNDROME

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Physicians in the United States may be unaware of the patient who spends his time going from place to place, resulting in wide travels, and presenting himself to hospitals, with a fanciful history and extraordinary complaints. It is not uncommon for these patients to have many surgical scars crisscrossing their abdomens, and willingly to allow further surgical procedures to be performed, regardless of the dangers. Publicizing case histories of such patients seems to be the only way of coping with the problem, which exploits medical services that could be put to better use.

Physicians universally have known the inconvenience of having inadequate medical history available, particularly when a patient's background is complicated by the work of prior surgeons, or when confronted by a comatose derelict dumped into the emergency room. At such time the harassed doctor may wish that diabetic records, pathology reports, and drug intake might be tatooed upon the patient in some convenient spot, or else that a central agency might function as a clearing house for such information. Since these facilities do not exist, it is necessary to rely on the memory of the patient or his relatives, or to engage in lengthy correspondence with previous attending physicians. Most doctors have had experience with drug addicts, neurotics, malingerers, and "dead-beats" whose distortion or concealment of their history is

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understandable. Less commonly encountered are patients who habitually falsify their history and simulate startling symptoms to accompany a harrowing present illness—all for no apparent reason. These odd patients become "addicted" to strange behavior patterns which they know will result in hospital admission. They are then subjected to perilous diagnostic and therapeutic procedures from which they seem to derive a peculiar satisfaction. The purpose of this article is to give an account of an extreme example of such extravagant behavior, and to call attention to a situation which may be of some importance, though hitherto not reported in the United States.

The Problem Patient

For a period of 40 days in 1954, the medical wards of the State University of Iowa Hospitals were kept in a state of turmoil by the extraordinary behavior of a single patient. He was a 39-year-old merchant seaman and part-time professional wrestler who made a dramatic entrance via the emergency room on the night of Aug. 18. Dressed in denim work clothing, and carrying his belongings in a small cloth sack, he burst into the hospital with blood spattered over the front of his shirt. He weighed about 260 lb. (118 kg.), seemed to be coughing up blood, and claimed to be in anguish from pain in the left side of his chest. He stated that he had been stricken suddenly with pain, and had begun to cough up blood while on a bus bound from San Francisco to Chicago. On examination, both legs were red, hot, and swollen, with distended superficial veins. It was assumed that the man had suffered a pulmonary embolus from the evident thrombophlebitis. Anticoagulant therapy was begun immediately. While claiming that "M.S." made him sick, the patient demanded something for pain, and received meperidine (Demerol), which relieved him temporarily. During the intravenous administration of heparin, it was noticed that he had an uncanny knowledge of the location of his own veins. This caused the attending resident to think of the possibility of drug addiction.

Surgical consultants offered the patient ligation of the inferior vena cava, which he vehemently refused. The ensuing day he demanded more and more meperidine, and made a great commotion over the slightest delay in the administration of his scheduled injection. He was suspiciously familiar with hospital routine. His sulking, childish, difficult behavior moved one resident to describe him alliteratively as "obese, obtuse, obstinate, obstreperous, and obscene."

Additional bits of history, some found later to be fabrications, were obtained from the patient. Originally from Watertown, N. Y., he had wrestled professionally as the "Indiana Cyclone." He was also a bosun's mate and a ship's carpenter. His ship had docked last at San Francisco. He had been on his way to Chicago to seek work as a longshoreman when he had been seized with fever, painful swelling of the legs, and finally chest pain and hemoptysis. He had left the bus and sought out a private physician who had directed him to the University Hospitals. He denied any similar previous illnesses, and seemed quite bewildered by the situation in which he found himself. In answer to questions about various scars on his body, he gave evidence of extensive experience with surgical procedures. He alleged that in 1940 his appendix was removed aboard a tugboat at Belfast, Ireland. In 1942 an umbilical hernia was repaired in Chicago. His left saphenous vein was stripped in 1944 at a Marine hospital in Portland, Maine. Surgical scars on his back were obtained in Yokohama, Japan, where both kidneys were explored because of hematuria. No abnormality was found. A large recently acquired scar on the right lower part of the abdomen was alleged to be the result of an auto accident in San Francisco. The patient asserted that this wound had been repaired in a doctor's office, which was startling, as the scar measured 10 in. (25.4 cm.) and seemed deep. A final scar, also new, was found just above the left internal malleolus. He claimed this to be the result of his tripping over a mop in a San Francisco movie theater. He assured those who had his confidence that he expected great wealth from a law suit pending against the theater, and promised a share of the bounty to anyone who diagnosed his condition. After this accident he had gone to Doctors Hospital in San Francisco. A clot was removed from the leg, and this he blamed for all his present trouble. The history was interspersed with boasts of physical prowess, and by harrowing stories of conflicts in the wrestling ring or aboard ship. He said he bossed his crew by physical superiority. Any challengers to his leadership were allowed to arm themselves with a marlinspike while he fought with his bare fists. All of his shipboard fights had ended in victories, but he had fared less well in the ring, where he had been knocked unconscious by a well-known wrestler. His size and rather ingratiating manner gave his stories credibility.

A letter requesting information was sent to Doctors Hospital, and the patient was astonishingly persuaded to sign a permission for release of information. Unfortunately the reply did not arrive soon enough to be of value in managing the patient, but did reveal that, while hospitalized, he had several wounds of his left thigh, had demanded meperidine, was quite unmanageable, and had signed himself out of the hospital. Seen there later as an outpatient, he stated that he had been treated in the interim at another California hospital for a pulmonary embolus.

The patient's laboratory data revealed a slight fever, anemia, and reticulocytosis. He submitted to bronchography of the left lung after a normal chest film had been obtained. The electrocardiogram was normal. Bronchoscopy was done with difficulty because the patient threatened bodily harm to many involved personnel, but it was completed in spite of his poor cooperation. Factitious bleeding was suspected, but every effort was made to find some valid lesion to account for his pain and hemoptysis. None was found.

After a few days the thrombophlebitis began to improve, but the demands for meperidine became greater and more frequent. He wheedled, threatened, and cajoled. He demanded and received a disproportionate share of the physicians' and nurses' time. There was always some complaint against someone whom he claimed he could not trust. Once an attempt was made to reduce his narcotic intake by diluting his injection with saline solution. This he immediately detected, and was thereafter extremely distrustful, allowing only certain selected persons to give him injections. At times he claimed he was in great pain, but his attention could be diverted, and he could be engaged in conversation during which he either forgot or ignored his pain. Frequently he refused to stay in bed, stating that his distress was so great that he must walk about. At intervals he coughed up bright red blood. No method of self-induced trauma was discovered, even though his mouth, pharynx, and larynx were carefully searched immediately after several such episodes. Expectorated material was stained with Wright's stain, and appeared to be human blood.

On four occasions this man signed himself out, and reached the hospital front door, only to cough more blood and be persuaded to stay. He made a habit of stalking the corridors, blood spattered ostentatiously over the front of his gown, threatening and pleading that he was not being cared for properly. He would intrude unannounced into the offices of various staff physicians demanding that they "do something" for him. He became a persistent and vexatious problem. Was he experiencing genuine bleeding from some obscure lesion? If so, his psychopathic and paranoid behavior might be the reaction of a childish and violent man to recurrent symptoms of an alarming nature. With limited funds, he might resort to these blustering tactics to obtain for himself the best available advice and treatment. If the hemoptysis were self-induced, then the method of producing it should be ascertained. So argued those who favored keeping the man in the hospital until his problem was resolved one way or the other. This course was made progressively more difficult by his insatiable demands for time, attention, and drugs.

One day hypodermic needles were found in one of the ward commodes. Because the problem patient had been seen coughing up blood many times just after leaving the bathroom, he was accused of needling his veins and sucking out the blood. This he emphatically denied. Afterward he made certain that he sometimes brought up blood after having been observed in bed for the preceding several minutes. His skin was searched from scalp to soles for self-inflicted lacerations, but none were found. He continued to refuse to remain in bed. He took his medical record from the chart rack, tore it to shreds, and flushed it down the toilet. The essentials were easily reproduced, however, because the events associated with his stay had impressed themselves indelibly upon the minds of the ward staff.

Disposition seemed almost impossible. Though regarded as a sort of psychopath and probable drug addict, the patient was a resident of another state, and could not be committed legally to an Iowa mental hospital. Each time he left the University Hospitals, he developed symptoms sufficiently severe to warrant readmission. It was finally agreed to let him go, regardless of symptoms, as he had become intolerable. He had with him a bus ticket to Chicago, and several people cheerfully donated taxicab fare to the Iowa City bus depot. At last he departed, defiantly coughing up blood as he went. His usually alarming symptoms were ignored. Hospital personnel uttered a sigh of short-lived relief, and life resumed its normal pace.

A day later one of the nurses caused consternation when she reported that she had seen the patient squatting on the curbing in front of a downtown moving picture theater. The worst fears were confirmed on the following day. Our merchant seaman reappeared in the hospital corridors—pale, febrile, and pleading with tears in his eyes for readmission. He had been refused entrance to his bus because he appeared ill, and was coughing up blood. Two days had been spent in a local hotel, where some obliging soul had prescribed whiskey for the patient's apparent severe discomfort. Great promises of cooperation were made, and the admitting doctors yielded. Back to the ward he came, on Sept. 17, 1954. He agreed to a strict regimen of bed rest, any violation of which would result in his being deported from Iowa City by the police.

Blood pressure at this time was 110/60 mm. Hg, temperature was 103 F (39.4 C), and pulse rate was 90 per minute. The left side of the chest anteriorly was tender to digital pressure. Because of dilated veins on the thighs and lower abdomen, it was thought likely that the inferior vena cava was thrombosed. Bronchoscopy was repeated, and bronchograms of the right lung were made, with no positive findings.

For a few days all was serene. The thrombophlebitis began to regress. Then, over some trivial occurrence, the Indiana Cyclone went berserk. He created chaos on Sept. 26 by overturning a cart laden with metal water pitchers which skittered noisily about the ward. He was ordered back to bed and threatened with physical restraints. This prompted him to withdraw to the ward utility room, where he inflicted a severe wound in his left thigh with a pair of scissors. He reappeared, sloshing blood at every step, storming up and down the hall, a terrifying spectacle. The tenor of his shouted remarks was, "Now look what you made me do! No one wouldn't do nothin' for me, so I let the clots out myself!" He seized a chair and swung it around to keep the assembled crowd at a safe distance. He soon weakened, and was taken to the operating room, where his wound was sutured and transfusions were given. After this he was restrained in bed in a single room, and seemed temporarily subdued. A psychiatric consultant saw the patient at this point, and thought him "basically a psychopathic personality with overtones of paranoid schizophrenia."

While the patient was in the operating room, his wallet was searched. It contained Merchant Marine papers for both bosun's mate and carpenter's mate. There were also many cards and papers containing addresses, mostly of doctors, hospitals, and clinics. A letter was sent to each address requesting information about the wallet's remarkable owner.

Special arrangements were made for commitment to a state mental hospital, for psychiatric treatment was deemed mandatory regardless of the patient's legal residence. When he learned of these plans, the patient managed to leave his bed, procured a razor blade, and again slashed his left thigh, with another severe hemorrhage. This wound was repaired and more blood given, and on Sept. 28, 1954, he was dispatched by ambulance to a state mental hospital.

The night following his admission there, the patient was caught at the front door in the act of escaping. With some difficulty he was removed to a locked ward, where he promptly snatched the sutures from his thigh, and bled severely. His wound was repaired a third time, and he was restrained in bed. He received no narcotics, and exhibited no withdrawal symptoms. The attending physicians thought the patient probably had a "psychological" drug addiction. On Oct. 22, 1954, he escaped from the mental hospital.

Meanwhile replies began to arrive from the various places to which requests for information had been sent. It was learned that this man had been collecting claims from several insurance companies since 1943. The sites from which these were filed suggested the peripatetic nature of the patient's existence; they included claims from San Francisco; Opelousa, La.; Talbotville, Ontario, Canada; Newark, N. J.; and Louisville, Ky.—all for alleged injuries to the legs or hands. His current series of hospital activities probably began in 1952 in Fort Wayne, Ind., at a Veterans Administration hospital. When the officials there discovered that he was not a veteran, he gained admission to City of Detroit Receiving Hospital by coughing up blood in the streets of that city. Police brought him in, convinced that he was a sick man. After a week he signed out against advice, on Dec. 30, 1952.

Some time was then spent in hospitals in Albany, N. Y., and Cleveland, but no details are known until July, 1953, when he was admitted to Los Angeles County Harbor General Hospital with thrombophlebitis and hemoptysis. After this admission, he seems to have taken one or more sea voyages, and then turned up at Doctors Hospital as mentioned previously. After three days, he left against advice when accused of drug addiction.

From March 23 to April 23, 1954, he was quartered at Highland-Alameda County Hospital in California. His behavior there became so grotesque that psychiatric consultation was sought. The consultant thought that the patient was "paranoid," but in his opinion there was not sufficient evidence to warrant commitment, and he recommended discharge. The following month was spent in the Contra Costa County and Vallejo hospitals in California. From June 24 to June 30, 1954, he sojourned in the Kern General Hospital in Bakersfield, still with thrombophlebitis and hemoptysis.

July 1-14 found him at the Salt Lake County General Hospital in Utah. The usual thrombophlebitis and hemoptysis were manifest. Ligation of the inferior vena cava was recommended because of the presumed pulmonary emboli. After much coaxing, the patient was taken to the operating room and given a spinal anesthetic. Suddenly he decided against the operation. He leaped from the table, gathered the surgical drapes around him like a toga, and marched out of the operating room, dripping spinal fluid from the needle which was still in place. After much persuasion by the dumbfounded onlookers, he again consented to the procedure, and his inferior vena cava was occluded by a plastic clamp. This operation accounted for the recent abdominal scar noted at the University Hospitals, and also accounted for the signs of vena caval obstruction originally thought due to ascending thrombophlebitis. The scar certainly did not result from an auto accident as the patient had stated.

After signing out of Salt Lake County General Hospital before his incision had healed properly, the traveler headed for Harvre, Mont. On arrival at the hospital there, he claimed to have been seeking employment as a ranch hand when interrupted by the sudden onset of chest pain accompanied by hemoptysis. A mental image of this huge wrestler astride a horse is ludicrous, but his story was accepted at first. Efforts to reduce the prospective ranch hand's narcotic intake culminated in his angrily leaving the hospital without permission.

Stanley, S. D., was the last known stop in the patient's saga before Iowa City. He was at Stanley late in July, 1954. The doctors there sized him up as an "imposter, drug addict, and professional hospital buster," who was endeavoring to "chisel drugs, or anything else he can get out of the medical profession."

He entered all of these hospitals with acute hemoptysis, denied any similar episodes in the past, demanded meperidine, was unmanageable, and signed himself out against advice. Often he would contact a local minister to whom he would relate a long tale of ills and woes. From this sympathetic individual he could usually extract funds for transportation to the next town.

Aug. 18 to Oct. 22, 1954, was spent in Iowa, as already described. Information about the "pilgrim's" progress subsequent to his Iowa visit was gathered by publishing letters about him in THE JOURNAL of the American Medical Association.[1] The many replies form a log of his travels during the succeeding months.

The night of his departure from Iowa found him in St. Francis Hospital, Peoria, Ill. His hemoglobin level was 5.2 Gm. per 100 cc., and so transfusions were given. He informed hospital officials that he was on his way to Joliet, Ill., where he expected to get work on a barge line, and asserted that after only a few hours work the barge company would be responsible for all of his hospital bills. Frequent demands for meperidine made the doctors think that the patient was addicted to this drug. When his condition improved, the dose was reduced. After this, he left the hospital against advice, refusing to sign his release. He was brought back by police, and meekly signed.

Next he appeared at the Milwaukee County Hospital, where he stayed from Nov. 27 to Dec. 6, 1954. He presented with the usual symptoms plus a recent wound of the right thigh. His story was that he had accidentally cut himself with a scythe while working on a farm. Nurses noticed him traumatizing his wound with his fingers. When his narcotic dose was reduced, he became belligerent and uncooperative. Discharge diagnoses were thrombophlebitis and narcotic addiction.

Dec. 6 through 14 was spent in Madison, Wis., at Madison General and Methodist hospitals. Their doctors thought he was insane, and committed him to Mendota State Hospital in Madison. He promptly ripped the bandage from his right thigh, and was transferred to the University of Wisconsin Hospital on Dec. 15, for care of the wound.

His performance there paralleled that at Iowa in astonishing detail. He was completely unmanageable. He concealed pins, scissors, and razor blades; he threatened to do bodily harm to hospital personnel; and finally he slashed open his wound with a bandage clip. He bled to shock level and received transfusions. The wound was repaired, and later a vein stripping procedure was done on the left leg. By Jan. 18, 1955, he again became uncooperative and threatened suicide. A psychiatrist described him as "severely paranoid." He once more slashed open his wounds, and was transferred back to Mendota State Hospital on Jan. 21. He was moved promptly the next day to Central State Hospital for the Criminally Insane at Waupun, Wis. He apparently remained docile, and was discharged on June 8, 1955.

He went directly to the University of Michigan Hospital and was a guest of the surgical service during the month of August. He performed his usual escapades. On the eve of a scheduled bronchoscopy, he was recognized by a resident who had known him at the University of Wisconsin Hospital. Bronchoscopy was canceled, and the patient was discharged.

Hitchhiking west, he arrived in Denver and entrenched himself at Denver General Hospital from Aug. 31 to Sept. 12, 1955. A resident there recognized the wayfarer from the Highland-Alameda County Hospital admission. This resident stated that factitious gum lacerations inflicted by a fingernail file had been discovered during that California hospitalization, but this observation was not recorded in the transcript of his hospital record.

From Colorado the trail led back to California and the Los Angeles County Hospital, where he was admitted Dec. 3, 1955, with a presumed pulmonary embolus. Bizarre behavior soon led to psychiatric consultation. Unfortunately for the patient's plans, his notoriety had preceded him, and he was recognized through the previously mentioned letters. A diagnosis of "personality trait disturbance, passive-aggressive personality" was made, and transfer to Camarillo State Hospital was arranged. He remained at that mental hospital until March 24, 1956, when, after being granted some liberty, he took an "unauthorized leave of absence."

Little is known of his whereabouts from that time until Jan. 22, 1957, when he was admitted to Modesto State Hospital on transfer from San Joaquin County General Hospital. After a brief stay, he headed east.

March 29, 1957, he turned up in the emergency room of the Edward J. Meyer Memorial Hospital, Buffalo. Presenting with the usual bleeding, he stated that he was taking phenindione (Hedulin) and that he had arrived by bus from Kansas City, Kan., where he had been treated for thrombophlebitis and "pulmonary infarctions." The resident who was summoned raced to the scene with a prothrombin tube and a vial of phytonadione (Mephyton). He found a "large man surrounded by several anxious personnel." The patient was holding a handful of blood-soaked gauze pads, and there was blood on the floor around him. Rather than ask for narcotics, he asked that some procaine be injected into his chest wall. (This had been done at Iowa in an attempt to relieve his alleged chest pain, with equivocal results.) The resident recognized the patient from one of the published letters. From the resulting pointed questions, the patient became suspicious, and left in a huff, saying he would go to Syracuse, where he would be cared for properly. No reports have emanated from Syracuse, but presumably this remarkable man even now is causing havoc in an emergency room or ward of some large eastern hospital.

Comment

It is our opinion that this patient's bleeding is factitious. Probably he produces it by a variety of methods. None of his many diagnostic studies has demonstrated any abnormality to account for his chest pain or his hemoptysis. It is possible that years ago he had a real pulmonary embolus, and thus learned the symptoms which he now simulates.

Be that as it may, he is now a professional hospital bum with a technique which guarantees him admission to any hospital at any time. He seems to enjoy the consternation and stereotyped response evoked by his blood-spattered appearance. His pattern is well established. He prefers large hospitals, and is especially fond of university centers. He expectorates blood in spectacular fashion. He plays upon the sympathies of the interns and residents. He ingratiates himself to some persons, and threatens others. He blusters but never actually harms anyone. He submits to all diagnostic procedures after much argument and persuasion. He usually seeks out a minister. Astonishingly he always uses his own name. He demands and gets attention, time, and drugs. The dramatic impact of his stunts is abetted by his theatrical experience as a professional wrestler. Many hospital audiences have now been held captive by his dramatic appeal to their humane instincts.

This chronicle demonstrates that this man has social and mental aberrations sufficient to warrant permanent care in a custodial institution. We do him no injustice by publicizing his story, as only harm can come to him through repeated injuries, diagnostic procedures, anticoagulant therapy, and operations undertaken by doctors who have no knowledge of his history. That a patient would conceal the fact that he has had such an operation as ligation of the inferior vena cava is almost unbelievable, but such is the method of this man's madness. With a ligated vena cava, his refusal to stay in bed guarantees the propagation of the thrombophlebitis, his only demonstrable physical illness.

Munchausen Syndrome

A detailed account of this man's activities has been given because he exemplifies a unique psychiatric and socioeconomic condition. In 1951 the term Munchausen's syndrome was somewhat facetiously applied by Richard Asher[2] to perennial peregrinating problem patients. Just as with our sailor-wrestler, Asher's patients spent their time going from place to place with various extraordinary complaints which led to repetitive hospital *admissions* and exploratory operations.

The term Munchausen is derived from the book of fabulous adventures and travels supposedly related by one Baron Hieronymus Karl Friedrich Munchausen. The wanderings and outlandish histories of patients with the syndrome are likened to the baron's fantastic stories. The real Baron Munchausen (1720-1791) lived in Bodenwerder, Hanover, Germany, and enjoyed an established reputation as a teller of fanciful tales. His favorite yarns related to his experiences as a German cavalry officer attached to the Russian army, and particularly did he embroider upon his part in the Turkish campaigns of 1737 to 1739. Permanent notoriety came to the baron when a book purporting to be based upon his "singular travels, campaigns, and startling adventures" was published anonymously in London in 1785.[3] It has been well established[4] that the author was a clever writer and geologist named Rudolf Erich Raspe. An exiled German, Raspe's own life is almost as fascinating as that of the baron as portrayed in the book. Raspe had been custodian of a museum at Cassel, and had been found guilty of selling medals from the museum's collection to finance his personal extravagances. Since he had been in the baron's company only once or twice, he used other sources for some of the book's stories. The book won immediate success, and went into many editions and translations. This greatly embarrassed the real baron, for he now became known as a teller of preposterous tales rather than as a mildly exaggerating raconteur.

Asher[2] outlined three varieties of Munchausen's syndrome, and gave them whimsical appelations[5] as follows:

1. Abdominal type (laparotomophilia migrans)—in which the patient travels about having repeated operations in various hospitals only to sign out against advice with wounds still healing and intravenous drips still going.
2. Bleeding type (hemorrhagica histrionica)—characterized by harrowing bleeding symptoms.
3. Neurological type (neurologica diabolica)—in which the patient presents with unusual yet often convincing fits, spells, faints, anesthesias, and the like.

A fourth variety may be added: the *cutaneous* type (dermatitis autogenetica). At least one example of this variant is known, and was discovered at the University of Virginia Hospital. A young coal miner learned that he had a skin allergy to thiomerosal (Merthiolate), and annointed his entire body, including his eyes, with a clear solution of this material. This produced a severe exfoliative dermatitis which served to get him into many hospitals in West Virginia and Virginia. He was found surreptitiously applying thiomerosal from a bottle kept hidden in a suitcase under his bed. The dermatitis cleared promptly when the bottle was confiscated.

Our sailor would seem to have both the abdominal and hemorrhagic varieties of the disorder, having the abdominal kind early in his career, and shifting to the bleeding kind in later years.

Patients with Munchausen's syndrome characteristically arrive at the emergency room with what seems to be an acute organic illness. Their history is superficially plausible, but is a fabric of falsehood interwoven with fact. Many surgical scars usually crisscross the abdomen. They have an "evasive and truculent manner."[2] Investigations eventually disclose that these patients have attended an amazing number of hospitals from which they have escaped or left against advice after quarreling with the doctors and nurses. Their wallets contain "numerous hospital attendance cards, insurance claims forms, and litigious correspondence."[2] Their tolerance for procedures is remarkable on admission, but diminishes rapidly, and invariably they become uncooperative after a few days in the hospital.

After publication of Asher's article, many examples of Munchausen's syndrome were reported in British journals. The most striking is one of the bleeding type in which the subject's gory actions are similar to those of our own sailor-wrestler-baron. This spurious bleeder has been reported many times[6] and has been known as a hospital vagrant since before 1951. He is most often found lying on the ground in a pool of blood a short distance from a hospital of his choosing. He tells the admitting doctors that he is an aspiring priest en route to a monastery. He bleeds from the eyes, ears, nose, and urethra. He tells his awestruck audience that he has had a splenectomy, and casually remarks that his "step-brother has Christmas disease."[7] This titillating statement alone is usually good for a few days on a hematology service. He produces bleeding by traumatizing his nasal mucosa and transferring blood to his eyes and ears with his fingers. Hematuria is simulated by soaking bits of cloth in blood and then swishing them about in his urine specimen. He has visited innumerable hospitals in England and Ireland; his only occupation is that of a professional patient.

Other factitious bleeders have been reported in Britain[8] as examples of Munchausen's syndrome. A similar type of hospital vagrancy has been reported in Germany.[9] No cases quite like Munchausen's syndrome have been reported in the United States. The most nearly similar is the patient with diaphragmatic flutter simulating angina, who made the rounds of a number of hospitals in this country, and was first reported in 1936.[10] Other patients have mimicked symptoms by any one of a variety of ways, ranging from the ingenuous to the ingenious. They have simulated pulmonary edema by aspirating water from a drinking fountain, hematuria has been produced by traumatizing the urethra with a broomstraw, fevers have resulted from various tricks done to thermometers,[11] and meningitis has been simulated realistically.[12]

Motivation in Munchausen's syndrome remains obscure, and this constitutes the most intriguing aspect of the problem. Although intentions have been announced to do "extensive research into Munchausen's syndrome,"[13] no plausible explanation for such behavior has yet been offered. These strange derelicts spend their lives in senseless pursuits which often result in rigorous procedures for which they have a flagrant disregard.

A number of explanations have been suggested[2] in an effort to account for the existence of the syndrome:

1. Possibly these people get pathological enjoyment from the dramatic role of the patient. Possessing terrifying and attention-drawing symptoms, they relish becoming the cynosure in the chain of exciting events that inevitably follows their dramatic appearance in the emergency room.

2. Perhaps they harbor a grudge against the medical profession and resort to this devious method to "get even." If so, they must also have an innate trust of doctors, for they allow surgical operations and other dangerous procedures to be performed.

3. Desire for drugs is a possible motivation. Certainly much of the Munchausen patient's technique in gaining medical attention is like that of some addicts. They are able to do without the drugs with impunity, however, as did our patient. Obtaining drugs may simply be another facet of their general exploitation of hospital facilities and medical good will.

4. Some may use hospitals as a hiding place from the police. To prolong their status as patients they swallow foreign objects, interfere with their wounds, or manipulate thermometers.

5. Still others may use the technique as an elaborate scheme for procuring free lodging, even though they realize that diagnostic studies will ensue. Most people would regard this as an exhorbitant price for bed and board.

6. It is also likely that masochism, psychopathic personality, hysteria, schizophrenia, or other psychoses may underlie the unique behavior pattern.

7. A final postulation[14] is that the patients are originally victims of medical mismanagement; that they suffer from undiagnosed, misdiagnosed, or incurable conditions; that unnecessary or unsuccessful operations have been done on them; and that the behavior pattern represents a psychopathic accretion built upon the victim's reactions to recurrent symptoms of a frightening nature. Though this line of thought might explain one or two episodes of Munchausen-type shenanigans, it does not explain why these patients persist in their unusual mode of existence.

Certainly the patient described here has had the benefit of lavish medical investigations; it seems improbable that any organic disorder could have gone undetected. Even assuming that a lesion causing hemoptysis had escaped diagnosis, what purpose is served in entering so many hospitals? By concealing his history and fabricating a new presenting illness for each new hospital, the patient does himself a great disservice. By the time the Munchausen-type pattern has become established, the patient is a candidate for a mental institution, regardless of whether or not he has an organic lesion to explain all of his symptoms.

Although it is quite possible that such patients suffer from a variety of basic personality disorders, neuroses, or psychoses, yet their behavior is so consistent, and the pattern so similar, that one can regard them as a group. The need for a term applicable to this group becomes apparent when one lists the various psychiatric diagnoses our merchant seaman has been given: "paranoid," "severe paranoid schizophrenic," "psychopath," "personality trait disturbance, passive-aggressive personality," and "psychopathic personality with overtones of paranoid schizophrenia." None of these convey much insight into the patient's problem, and do not depict his bizarre behavior. The term Munchausen's syndrome conveys a clear idea of a clinical picture to those familiar with the term.

It is interesting that no cases of Munchausen's syndrome have been reported in the United States. Possibly there are more such cases in England because of the socialistic medical practice in that country. However, it should be pointed out that the patient described here has had no difficulty gaining entrance to any hospital, nor has any expensive procedure or treatment been denied him, in spite of his failure to pay his bill or to offer payment. There may be many more examples of Munchausen's syndrome traveling about in this country who have escaped recognition. If this is true, then a great amount of trouble and expense is being wasted. Our patient alone has bills approximating $2,000 at each of six or more hospitals. Blood that might have been used to better advantage has been spilled ostentatiously by him from some still undiscovered source.

Suggestions have been made that a sort of "international rogue's gallery" of individuals with Munchausen's syndrome be compiled and distributed among the medical profession.[15] This probably would be impractical and perhaps often unfair, and so it is hoped that publication of this article will serve to alert the profession to the peregrinating baron described here as well as to others of the same ilk.

Summary and Conclusions

The case of a 39-year-old merchant seaman is a remarkable example of hospital vagrancy and spurious hemoptysis. Similar patients in Britain have been said to have Munchausen's syndrome because their wide travels and fanciful histories are reminiscent of the travels and adventures of fiction's Baron Munchausen. Such patients constitute an economic threat and an extreme nuisance to the hospital they choose to visit, for their deception invariably results in numerous diagnostic and therapeutic procedures. Publicizing their histories in journals, thereby alerting the medical profession, seems the only effective way of coping with them. Appropriate disposition would be confinement in a mental hospital. Such patients have enough social and mental quirks to merit permanent custodial care, otherwise their exploitation of medical facilities will go on indefinitely.

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Myocardial Revascularization.—Coronary artery heart disease is a degenerative disease and is the number one killer of the adult male. Atherosclerosis, the basic pathology of coronary artery heart disease, is an as yet incompletely understood aberration of fat metabolism. The understanding of the pathogenesis of atherosclerosis and its prevention will ultimately be the definitive treatment of coronary artery heart disease. The mortality rate of ligation of the descending branch of the [left] coronary artery [is] 23% in our laboratory. Death occurred only when the septal blood supply [was] also cut off. Revascularization of the myocardium can protect the heart in properly selected cases from death in subsequent coronary occlusions. It can prevent pain of ischemia by redistributing blood more uniformly throughout the myocardium. —E. Marcus, M.D., E. E. Hasbrouck, M.D., and S. N. T. Wong, M.D., Myocardial Revascularization, A. M. A. *Archives of Surgery*, February, 1957.

INDUSTRIAL INJURY—THE PRACTICAL NEED FOR EVALUATION OF CAPABILITY

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There are many highly specialized rehabilitation centers for the severely disabled and many sources for treatment of minor injuries, but there are comparatively few sources for complete physical treatment designed for people with moderately severe injuries who anticipate returning to their previous occupations or some modification of their normal employment. In many instances it is the responsibility of the physician to determine whether the injured person is employable. It must be recognized that an individual with a given disability may be able to perform under certain working conditions and fail completely in a different working situation. It is felt that present facilities, no matter how extensive, often fail to recondition properly, by not simulating true working conditions. Practical proof is needed to evaluate whether a worker can perform his previous occupation, or whether retraining is required.

In any discussion of rehabilitation, one must automatically adhere to the premise that there is no substitute for earning capacity. It therefore becomes the moral responsibility for all who deal with the injured individual to protect and increase his earning capacity. A financial settlement cannot adequately protect him. The false sense of security of X dollars a week for Y number of weeks will not protect him. The greatest protection of his security lies within his own capabilities and in his own ability to exploit himself.

Once a man has suffered a disability, he forfeits his position in the world he knows as it moves on ahead of him. How far behind he lags will depend upon the severity of the injury, his psychological make-up, and what tow-ropes are available to which he can cling so as not to be left so far behind he cannot catch up.

This paper concerns one of these tow-ropes—rehabilitation. Rehabilitation is defined as follows: "to restore to a former rank, or right, to reinstate, to vindicate, to restore to solvency, efficiency; to put in condition, to make one's livelihood again," and allow me to add my definition—to protect one's earning capacity by increasing one's capabilities. By inference, as far as the injured individual is concerned, this means that a maximum reduction of disability is imperative.

Strictly speaking, rehabilitation is a team approach which utilizes many services, not only medical but social and vocational as well. As a result, when one commonly thinks in terms of rehabilitation, the assumption is that the person with whom one is dealing has a disability of such magnitude that a change of occupation is imperative and either special equipment or special training is required to make him employable. Consequently rehabilitation centers have been concerned primarily with people with severe disabilities such as paraplegia, hemiplegia, amputation, severe poliomyelitis, and cerebral palsy. These centers with their total approach are extremely important. They are a must for the severely disabled. In this country rehabilitation centers, with the exception of the Veterans Administration, are generally either community-sponsored, group-sponsored, or associated with a medical teaching institution.

Many of the sources mentioned concentrate on physical restoration or medical rehabilitation and are limited in the extent of the vocational aspects, performing mainly prevocational testing and prevocational training. In addition, there are a number of sources of rehabilitation which attack the problem primarily from the vocational aspect. The vocational centers are in reality sheltered workshops. Naturally these centers vary in their approach, application, and extensiveness depending upon their purposes and the objectives for which they were founded. While there are many sources that treat the industrially injured, there are few that actually cater to the industrially injured and that primarily direct treatment to reducing disability factors as defined by law.

In summation we find we have highly specialized centers for the severely disabled, many sources for treatment of minor injuries, but comparatively few sources for complete physical treatment designed for people with moderately severe injuries who anticipate returning to their previous occupations or some modification of their normal employment.

It must be reemphasized and remembered that for every severely injured patient requiring total rehabilitation there are at least 50 requiring extensive and intensive medical rehabilitation. These are frequently the forgotten men. Their cases often reach a point of dispute. They are the ones who frequently suffer the great loss and unnecessary permanent disability.

Read before the Section on Physical Medicine at the 106th Annual Meeting of the American Medical Association, New York, June 6, 1957.

While medical rehabilitation includes the utilization of all branches of medicine, it should be understood that the references in this paper to treatment will be confined to restoration by utilization of conservative physical means. Actually, this communication is a presentation of the theoretical consideration: Should a practical realistic rehabilitation treatment program be established which will return the injured person to his former occupation, or, failing in this objective, prove he is incapable of performing his former occupation?

Responsibility in Rehabilitation

Under the existing compensation law it is the obligation of the insurance carrier to provide treatment which will cure or relieve a disability incurred as the result of employment. Theoretically, maximum benefit from treatment has not been attained until the patient has been restored to some form of gainful employment and the effect of the injury on the injured person is minimized. Unfortunately, both the questions of employability and of maximum benefit from treatment frequently become matters of dispute.

In many instances it becomes the responsibility of a physician to determine whether the injured is employable. It is common for the physician to state that the patient can return to work while the patient insists he is incapable of fulfilling the job requirements. It must be recognized that there are numerous extraneous factors which influence these opinions. In many instances these factors are intangible and stem from psychological influences. Some of the psychic influences on the patient are feelings of insecurity, fear of discharge for nonperformance, fear of a second similar kind of injury, and depression from prolonged inertia and defeatism.

Only too frequently the physician's statement of work ability is as subjective as are the patient's complaints. The physician, in formulating his opinion, may be basing his conclusions upon average experience of similar cases. He may feel the complaints are exaggerated, he may actually be biased—or "pressurized"—in favor of the insurance carrier, or he may be overly sympathetic toward the patient. This is particularly true in borderline cases where it is difficult to evaluate the true extent of disability.

It must be recognized in evaluation that an individual with a given disability may be able to perform under certain working conditions and fail completely in a different working situation. Consequently it is a common experience for him, upon being returned to work, to find himself actually incapable of performing an average day's work.

In disputed cases the patient may be discharged with recommendation of assignment to light work and all medical and compensation benefits suddenly terminated. In some cases this only serves to lose control of the case as the patient neither receives medical attention nor returns to work. At this point the injured person usually appeals his case to the Industrial Accident Commission, and many valuable weeks may be lost while a ruling is awaited. In addition, because of dissatisfaction and stimulation of insecurities, the subjective complaints are increased.

In these questionable circumstances, unless the physician is aware of the total requirements of the work situation and is fully cognizant of the capabilities of the injured person as applied to that particular work situation, it becomes impossible for him to properly evaluate employability. Therefore, in determining when an individual should return to work the physician must estimate and evaluate the following points: (1) the individual's subjective complaints, (2) the degree of disability, (3) the nature of the injury, (4) the requirements of the job, and (5) the individual's true working capacity.

From the point of view of the injured person, light work consists of any job that he can perform, within the limitations of his abilities, that is not as physically demanding as his normal occupation. Therefore, by nature of this definition, light work will vary depending upon the type of injury. For example, in the case of a leg injury, light work would consist of any type of activity of the upper extremities, with various degrees of restriction of weight bearing. Another example would be, in the case of an upper extremity injury, work activity requiring the use of the opposite uninjured upper extremity or possibly limited activity of the injured extremity. In the case of back injury it may mean work modifying or restricting the amount of stooping and lifting involved. It is obvious that each situation would have to be considered on the basis of its own merit. If the employer is a large concern that can provide work with a variation in physical demands, the injured person frequently can be fitted into the organization readily. A small employer may find it more difficult to find suitable activities. The employer may not be in a financial position, due to competitive factors or because of lack of capitalization, to carry the responsibility of reemployment until the individual is capable of performing a full day's work.

Then there is that other great category of employers who hire by the job. In a situation of this type the employer feels no obligation to rehire the same employees when the job is completed. This is particularly true for construction workers and members of the building trades who are hired by the job. Certainly these employers will not deliberately hire a man for light work. Furthermore, if they find a man is incapable of performing what they consider to be a normal day's work, the man is discharged.

Attitudes in Rehabilitation

Considerable experience with a physical medicine rehabilitation service which was designed primarily to answer the needs of the industrially injured workman with moderately severe disabilities and in which treatment has been aimed squarely at reducing the factors of disability, such as loss of motion, atrophy, and subjective complaints, has been enlightening as to the treatment requirements of the industrially injured. Originally, stock answers encountered when presenting a treatment answer for these physical disability problems were the untrue statements "let them work it out for themselves," "they get better anyhow," "let nature take its course," "if they want to work on it, they will overcome the disability by themselves." A do-only-what-was-absolutely-necessary attitude was prevalent. Consequently one was and still is to some extent able to categorize many of these injured individuals into groups:

Group 1 consists of those who are medically neglected and allowed to drift because of (*a*) refusal to accept liability or (*b*) "lets wait and see if it won't improve by itself" attitude. These people frequently have a reducible disability which by being untreated or inadequately treated results in permanent disability by the development of fixed irreversible tissue changes.

Group 2 includes those who fail to receive proper guidance and, as a result, have no insight into their condition, which leads to an intensification of their anxieties and insecurities until they reach the point where their disabilities become the only means by which they can justify to themselves their inability to support themselves and their dependents. This category includes those who have lost confidence in themselves and in their own abilities. Included also are those who have been both physically and spiritually broken to the point where they themselves do not know what they can or cannot do.

Group 3 comprises those who, as a result of the injury and/or prolonged inactivity, are deconditioned to the point that they cannot work even though they desire to do so.

On the other hand, if adequate proper treatment is instituted early, not only is the injured aided, but, by reflection, others concerned with him and his problems are also benefited. To be more specific, if the individual is helped in such a manner as to reduce his disability the following benefits are derived: 1. Most important, his earning capacity has been protected. 2. The employer has salvaged an experienced employee who knows his job and the standard operating procedure of accomplishment. 3. The permanent disability rating cost is reduced.

The fact that he has only limited motion of his wrist, for example, does not concern the injured person so much if he feels certain in his mind that he can earn a living, that as much has been done for him as modern medicine allows, and that he has been fairly compensated for his loss. In my experience, the vast majority of patients place the disability rating last. Their first concern is whether they are being treated in the best manner possible and the second, how long they are going to be off work.

What can we do to help these individuals? First, we must look upon them as individuals. Second, we must make them look upon themselves as individuals. Third, we must take the dollar sign off of disability and invest those dollars to produce capability. Fourth, when necessary we must force realization of responsibility. Fifth, if disputed, we must demand objective proof or disproof of work capability. Sixth, we must condemn and prevent beating the injured into submission by financial pressures. Seventh, we must not condone or encourage settlement of disabilities if it is possible that medical treatment will reduce that disability; and we must make every effort to see that needed and proper medical treatment is a continuous uninterrupted process so as to prevent retrogression and permanent changes in the tissues. Eighth, we must condemn irresponsible action and unwarranted claim jumping on the part of the injured and the claim that nonindustrial injuries are due to employment, and we must vigorously stamp out the evils associated with the so-called gold cure.

In my opinion there is only one fundamental question involved in considering the need for rehabilitation, and that is—will the treatment be of benefit to him, the injured? I do not believe that the question of cost should have any bearing on whether more extensive treatment should be provided. In my observations the ultimate cost factors increase in direct proportion to the denial of treatment and to the inadequacy of treatment provided. But the determination of both the extent and the quality of treatment is usually based upon the recommendation of a physician, just as it is frequently the physician's responsibility to determine employability. With few exceptions the recommendation for specialized treatment must come from a physician who is not in a position to provide that treatment himself. If for some reason, such as lack of information, disregard for human values, or personal reasons, the physician does not properly evaluate the need for more specific treatment than he can provide himself, the injured person must either suffer or take steps for his own protection. It is no wonder then that so many of these cases become matters of dispute.

To actually determine the accuracy of our medical judgment we physicians must first look at ourselves critically and see why the injured person fails on attempting to return to work. In my experience the main reasons are as follows:

1. There is no such thing as modified or light work unless the employer desires it. Where there is an understanding employer, the individual may be given an opportunity to gradually adjust to the working situation. This transition to full work has proved to be even more effective if treatment has been continued during the adjustment phase. 2. There has been improper general reconditioning, especially in cases where there has been prolonged disability. It is a fact that when an injured man has been off work longer than a few weeks he

becomes deconditioned. He must be reconditioned to become capable of performing a full day's work. It is a common experience that, in spite of improvement with treatment, the patient returning to work suffers from increased soreness, generalized fatigue, and weakness lasting weeks or even months. 3. Sometimes there is an inadequate reduction of disability. A certain percentage of individuals fail on attempting even modified work, and they must be returned temporarily to a status of total disability for a variable period of time before work is attempted again. 4. The injured himself fails to recognize the need for modification of employment, especially in instances where there is a degree of permanent disability which prevents him from performing his previous occupation. 5. Failure to carry over medical treatment during the initial weeks of reemployment results in aggravation of symptoms. 6. Fear of discharge for inability to perform leads to failure.

In addition there are certain factors which aggravate and prolong disability because they interrupt and delay treatment and place the individual in a state of confusion. They are repeated denial of treatment, conflicting medical reports, and sudden withdrawal of compensation without notice.

There is nothing so discouraging for a patient who is making every effort to cooperate, and who is actually making progress on the road to recovery, as to suddenly find himself stranded as a result of the conclusion derived from a special medical examination.

Present treatment facilities, no matter how extensive, often fail to recondition properly. In the United States they do not simulate true working conditions. Most treatment not only fails to stress function but actually ignores the general reconditioning and work disciplines which are imperative.

Previous Experience and Suggested Program for Rehabilitation

The muscles used in work may be different from the muscles injured. The statement that work is the best treatment is frequently erroneous in that the work load may be excessive and nonspecific and the muscles may decompensate under the strain. On the other hand, therapeutic exercises for the involved parts do not recondition the body as a whole. Therapeutic exercises build strength but not endurance. The strength and endurance required can be accomplished only by a graded program which is specifically designed to this end. This is especially true for older workmen. The prolonged deconditioning is, in some cases, more detrimental than the physical disability resulting from the injury.

In order to have some practical experience and to evaluate the need for a more adequate treatment program, a building was constructed utilizing wherever possible men over 45 and men with physical disabilities. Several conclusions were soon obvious. The average older workman cannot work a full work day without fatigue, which becomes more apparent as the work week proceeds, particularly if there is considerable physical effort involved; he cannot produce competitively against younger men on a full-day basis; and he frequently refuses to recognize his own physical limitations.

From this experience, it was found that the average older man cannot be hired in a competitive arduous work situation. Older men and men with physical disabilities who follow construction trades can be hired under selected working conditions; they can be hired competitively on an hourly basis provided either the number of hours worked each day or the amount of exertion expended is so controlled as not to exhaust their physical reserves.

If the experience obtained in the foregoing project is a criterion of the ability of men who are actively competing in the open labor market, then it is reasonable to believe it is even more difficult for an older man to find employment if he has been immobilized for a prolonged period due to injury and has undergone, in addition, deconditioning from lack of generalized activity.

The reconditioning aspects then become extremely important for the older injured workman and the younger more severely injured workman because they have more difficulty in recovering from a disability, they are less employable in a competitive labor market, and they are more likely to develop a feeling of insecurity and will subconsciously use their disabilities as a brace for their own inadequacies.

To encourage more general reconditioning, in addition to specific treatment aimed at reduction of disability, certain selected patients were placed on an all-day program. This program was established on a purely voluntary basis. It was first suggested to the patient; if he agreed, the insurance carrier was notified. The basic principle showed prospect of success. However, there were certain inherent weaknesses. Treatment was interrupted by the carrier for special examinations by physicians unfamiliar with the objectives of the treatment program. Insufficient motivation for the patient led to boredom. There was some gradual resentment of spending the whole day in treatment and, as time progressed, absenteeism increased and presentation for half-day treatments became more frequent. The weaknesses demonstrated in this preliminary study were basically due to lack of motivation and consequently an inadequate fundamental program.

A solution to the problem could be a center for treatment coupled with a center for evaluation of capability. Distinction must be made between this proposed capability evaluation center and a sheltered workshop. The sheltered workshop takes a person with a fixed disability, such as blindness, epilepsy, or cerebral palsy, and fits him into a protective work situation. The job is predetermined on the basis of the disability. The individual receives a given amount of pay, usually either by piece-work or by the hour. These shops are permanent situations and unless the individual voluntarily leaves there is no graduation. This failure to encourage separation from the protected situation is a weakness that should make the use of this unmodified approach unacceptable for dealing with most industrially injured persons.

On the other hand, the capability evaluation center could apply the principle of the sheltered workshop plus the purpose of a medical rehabilitation center and have as its basic purpose reduction of disability and building of endurance, general reconditioning, and capability evaluation. To be effective it is imperative that any program, as suggested, encourage function of the injured parts within the limitations of those parts. There must be job disciplines which approach those of a true working situation. There must be cooperation and consideration both by and for the injured. There must be a willingness and desire for success by the injured and by the administrators. There must be a method of measurement and incentive.

It is undoubtedly true that there are many persons who are capable of two, four, or six hours' work, but not of eight hours' continuous work at productive labor. By controlling the work situation, in time and in nature, the individual's work capacity and endurance could be more effectively determined. From the psychological viewpoint it is important that work should be of a productive nature, for it would demonstrate to the individual that he is capable of gainful employment. Productive work would also serve to reindoctrinate him into a working situation.

Although it is of course impractical to duplicate all types of occupations, if sufficient graduations of work level could be provided and work disciplines maintained, then the program principle would have the prospect of success. Making this program operative would require the cooperation of the incapacitated person and the insurance industry. Some of the stumbling blocks so far as the individual is concerned might be lack of incentive, fear of loss of compensation, and fear of loss of rating.

The lack of incentive can be overcome by allowing some additional remuneration for work accomplished. This should be over and above compensation payment. Since work ability would vary, being very low initially and increasing toward normal, it is suggested that it be done on a piece-work basis or on a gradually increasing hourly pay basis, the pay scale being in proportion to normal work accomplished. It would naturally follow that a patient's increase in physical capacity and work tolerance would parallel his increase in productivity and consequently his earning capacity. It would be of paramount importance that in no circumstance could the individual receive the full amount he normally received in employment. Otherwise there would be no inducement to graduate. The supervisory and administrative cost, when added to the patient' additional remuneration, would produce a produc at a cost approximating that of normal labor.

There should be an explanation to the injure person of the basis of rating of the Industrial A cident Commission. He should be made to unde stand that it is not to his advantage to be nonpr ductive. He should know that he can never reca ture his lost wages. He should know that his ratir will depend on the degree of permanent disabili when his condition is considered fixed and static ar not likely to improve. He should be educated the fact that, if he allows the permanent disabili to reach a point where it interferes with his futu earning capacity, his loss of earning power will e ceed whatever he may possibly gain by his fir financial award.

It is realized that there are many technical o jections to the proposed plan, yet the proposed pl offers certain advantages to the injured. It preser a method whereby his abilities can be more real tically and objectively evaluated, and it would gi practical proof of whether he can perform his pı vious occupation or if he requires retraining for new employment. It would increase his work tol ance in a gradual manner and prepare him mc adequately for normal productive labor. It wou give him some additional financial assistance at time when he needed it most. It would give hi insight into his own abilities and limitations in terı which he himself can comprehend. It would redu his disability, improve his capability, and increa his earning capacity.

Summary

A program for evaluation of the capabilities of th industrially injured person and for treatment of h disability could be used to attempt to return tl individual to some form of gainful employment, increase his earning capacity and capabilities, ar give him insight into his abilities. Patients shou be selected and should agree to participate volu tarily. The participants should receive some ad tional remuneration over and above compensatic The total remuneration should not be as great would ordinarily be earned, lest it reduce incenti to return to normal employment channels.

This program would in effect reduce disabili factors in some cases and would serve at the sar time to give a clearer picture as to true perm nent disability factors in other cases. It would be visual demonstration to the individual of his ov capabilities in terms which he himself can compı hend. It would give a positive objective medic viewpoint as to whether the individual actually capable of working and of his working capacity. properly administered this program would give unbiased approach which would serve as protectic to all parties participating.

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THE STORY OF THE SECTION ON ANESTHESIOLOGY OF THE AMERICAN MEDICAL ASSOCIATION

Scott M. Smith, M.D., Salt Lake City

Establishment of the Section on Anesthesiology by vote of the House of Delegates in 1940 represented the fruition of 35 years of work. It meant that anesthesia was recognized as a specialty. An impressive list of scientific papers and exhibits have been contributed at annual conventions. The advances in anesthesiology implied in these numerous contributions, and the corresponding gains for the safety of the surgical patient, are beyond calculation. Further tremendous advances are in prospect. New pharmaceuticals, equipment, and methods need to be developed, and the benefits of new techniques must be made available to every patient. Efforts to disseminate knowledge, to build understanding, and to attract qualified physicians into the specialty must be redoubled.

The formation of the Section on Anesthesiology of the American Medical Association was a difficult task, requiring tremendous energy, perseverance, tolerance, patience, and endurance. The course of its formation was by various and devious routes. Progress was hampered, slowed, and on some occasions halted, but the burning desire for its establishment never flickered in the minds of the founders.

Organized anesthesia in the United States stems from the Long Island Society of Anesthetists. The formation of the Long Island Society of Anesthetists occurred on Oct. 6, 1905, as the result of a meeting of a group of physician anesthetists at the invitation of Dr. A. F. Erdman. This society was the forerunner of our present organization and is the second oldest anesthesia society in the world. The London Society of Anesthetists was founded in 1893. The name of the Long Island Society of Anesthetists was officially changed to the New York Society of Anesthetists in 1911. Plans were discussed for the formation of a national society of anesthetists at the May 15, 1912, meeting of the New York Society of Anesthetists. At this meeting the executive committee was instructed to confer with the officers of the American Medical Association about forming a section on anesthesia. It was decided to hold the meeting for the contemplated organization of the national society after the symposium on anesthesia to be held at the American Medical Association meeting in Atlantic City in June.

As with other specialties, when our country went to war in 1917, the New York Society of Anesthetists adopted a resolution calling the attention of the Secretary of War and the Secretary of the Navy to the importance of anesthesia and offering their services as individuals to give instruction in anesthesia and to serve their country.

With World War I a matter of history, efforts were again made in 1921 to secure a section on anesthesia in the American Medical Association. Letters were sent to the Secretary and representatives were sent to the committees of the American Medical Association for the next 10 years without success. By 1933, attention was directed to certifying members of the New York Society of Anesthetists in order to elevate their status. A Certification Committee made its final report in December, and a constitutional amendment setting up proceedings for fellowships was adopted. This move became the spur for entrance into the American Medical Association.

Recognition of Anesthesiology as a Specialty

In 1933-1934 the Advisory Board for Medical Specialties was set up by the American Medical Association. Unfortunately, only organizations who had sections in the American Medical Association were included in the Milwaukee meeting of February, 1934. The requirement of the Advisory Board that its component bodies come from the related sections of the American Medical Association barred any consideration for anesthesia.

T. D. Buchanan, of the New York Society of Anesthetists, prophetically suggested that perhaps anesthesia could qualify under the related Section of Surgery and that possibly the point might be gotten around in that way. Buchanan also felt that the purpose of certification was not only personal gratification to the individual in that he had passed a formal examination but that anesthesia would thus be recognized as a full and distinct specialty by the American Medical Association.

Late in 1934, the Committee on Certification was empowered to print application blanks. The Committee set up plans for holding examinations twice a year. By Oct. 10, 1935, the Fellowship Committee was able to report that they had already received requests for certification from 23 states. At this meeting it was announced that a Section of Anesthesia of the Indiana State Medical Society had held its first meeting. California formed a Section of Anesthesiology in the State Medical Society in 1920.

Chairman's address, read before the Section on Anesthesiology at the 106th Annual Meeting of the American Medical Association, New York, June 6, 1957.

The national flavor given to the certification procedure by the representation of members from the 23 states aroused hope that the American Medical Association would recognize the specialty of anesthesia.

In February, 1936, the name of the New York Society of Anesthetists was changed to that of the American Society of Anesthetists, in order to make the society a national society in anesthesia in name as well as in fact. The first business after changing the name was the appointment of John S. Lundy as delegate to a meeting in Chicago of the Guiding Committee of the American Medical Association and of the Advisory Board for Medical Specialties to represent the American Society of Anesthetists in speeding representation. (Dr. Lundy informed me that from this time on the A. M. A. Headquarters was the stopping place for him any time he went near Chicago until the Section was granted.)

The members of the American Society of Anesthetists were urged to attend the American Medical Association meeting at Atlantic City in June, 1937, and to register in the Section on Surgery, adding the word "anesthesia" in parentheses. Dr. Ralph M. Tovell, in the meantime, had reported that three representatives from the surgical section (general and abdominal) of the American Medical Association had been appointed to meet with representatives of the American Society of Anesthetists and the American Regional Society of Anesthetists to consider and facilitate the formation of a Board of Anesthesia. At this meeting in October, 1936, it was recommended that the anesthetists' representatives to the Board be appointed from the Section on Surgery (General and Abdominal). The first representatives were to be fellows of the American Society of Anesthetists. With this recommendation, the surgical section accepted the responsibility of sponsoring anesthesia as a related section. They also placed two members of the American Society of Anesthetists on the surgical program for the Scientific Session of 1937.

At the instigation of Sise and Lahey, the American Medical Association officially invited the American Society to prepare or suggest the preparation of a scientific exhibit on anesthesia at the Atlantic City convention. The scientific exhibit on anesthesia was presented by the Committee on Scientific Exhibits of the Board of Trustees of the American Medical Association under the guidance of a special committee composed of D. Chester Brown, chairman, Danbury, Conn.; Frank H. Lahey, Boston; and Paul Nicholas Leech, Chicago. Details of the exhibit were worked out by the members of the various anesthesia organizations throughout the country.

A pamphlet was prepared for distribution depicting the details of the 1937 exhibit. The topics covered were (1) how a department of anesthesia in a hospital can carry some of the load from other departments in the hospital; (2) an ideal anesthesia service, showing its connections with other departments of a university; (3) a practical organization of a department of anesthesia in a large hospital or clinic; (4) medical instruction in anesthesia; (5) pathological and mechanical factors which may affect the transport of oxygen, carbon dioxide, and ether; and (6) books and journals devoted to anesthesia and its problems.

A similar special exhibit on anesthesia was presented in 1938 and in 1939. Dr. Ralph Waters has been termed the "guiding genius" of these special exhibits. The book "Fundamentals of Anesthesia," published by the American Medical Association, was the direct result of these special exhibits.

As a final step toward approval, at the meeting in Chicago setting up the American Board of Surgery, the Advisory Board for Medical Specialties recommended that the American Society of Anesthetists apply to the American Board of Surgery for an opportunity to come in on the basis of an Affiliate Board. The plans for affiliation of the American Board of Anesthesiology and the American Board of Surgery were completed on June 2, 1937. In February, 1938, the Advisory Board for Medical Specialties approved the affiliation and the American Board of Anesthesiology proceeded with its incorporation in the state of New York. In 1941 the Advisory Board for Medical Specialties approved the establishment of the American Board of Anesthesiology as a separate major board with the unanimous consent of all the participating societies and boards.

Establishment of Section on Anesthesiology

A tremendous amount of time and effort had been expended on the part of many people in obtaining the approval of the American Board. However, since 1912 the goal had been the establishment of a Section on Anesthesia of the American Medical Association. All of the effort spent on the American Board had been instigated originally for the Section on Anesthesia.

James T. Gwathmey had made repeated efforts to have the American Medical Association establish a Section on Anesthesia at the June meeting in 1921. The section was not established. The organization renewed its efforts for the establishment of a section in 1939. Some of the states had already established sections on anesthesia in their state medical societies. The New York State Medical Society was including a session on anesthesia at its annual meeting in April, 1939. Sessions on anesthesia in the Section on Miscellaneous Topics had been presented in 1922, 1924, 1933, 1935, and this was to be repeated again in May, 1939, at the St. Louis meeting of the Association.

In October, 1939, a special affiliation committee was appointed by the American Society to determine the best ways and means of procedure for the specialty as a whole. A subcommittee of the special affiliations committee of the American Society of Anesthetists was appointed to meet with the Council on Scientific Assembly on Nov. 24, 1939, in Chicago.

The culmination of these and all other associated efforts was the notification by the Chairman of the Council on Scientific Assembly of the American Medical Association as reported at the regular meeting of the American Society of Anesthetists on Dec. 15, 1939: "I wish to inform you that the Council agreed to give you one session this year under the Section of Miscellaneous Topics for your Section on Anesthesia. We also agreed to recommend to the House of Delegates that a Section on Anesthesiology be established."

This was tantamount to victory, since in the past the recommendation of the Council had always been approved by the House of Delegates. Thus, in June, 1940, at the American Medical Association's annual meeting, the House of Delegates voted unanimously to establish a Section on Anesthesiology. A telegram from the Secretary of the Association informed the Society of the list of officers selected for the new Section on Anesthesiology for 1941. This included the delegate to the House of Delegates from the new Section. A mission begun 35 years before had been accomplished. Anesthesia was now a recognized specialty!

I would now like to give you at least a bird's-eye view of what has happened in the Section since the date of its establishment. The chairmen of the Section, the year they served, and the topics of their addresses are given in table 1. There was no meeting of the American Medical Association in 1943 or in 1945 because of the war. Two secretaries have served the Section since its establishment. Dr. John S. Lundy served from 1941 to 1955. Dr. Daniel C. Moore has been serving since 1955.

Table 1.—*Addresses of Chairmen of the Section on Anesthesiology*

Yr.	Chairman	Title of Address
1941	Ralph M. Waters, Madison, Wis.	The Chemical Absorption of Carbon Dioxide from Anesthetic Atmospheres
1942	Thomas J. Collier, Atlanta, Ga.	Crawford W. Long, 1815-1878
1944	Paul M. Wood, New York	Some Aims of an Anesthesiologist
1946	Ansel M. Caine, New Orleans	Group Practice of Anesthesiology
1947	Charles F. McCuskey, Los Angeles	The Status of Anesthesiology as a Specialty
1948	Ralph M. Tovell, Hartford, Conn.	Anesthesiology in the Veterans Administration
1949	C. Walter Metz, Denver	Anesthesia, Past and Present
1950	Frederic W. Clement, Toledo, Ohio	Surgery Before the Days of Anesthesia
1951	H. Boyd Stewart, Tulsa, Okla.	Professional Obligations
1952	Stevens J. Martin, Hartford, Conn.	Anesthesiology: A Challenge
1953	Rolland J. Whitacre, Cleveland	The Anesthesiologist's Responsibility to the Patient
1954	Moses H. Krakow, New York	Anesthesia Then and Now
1955	Ralph S. Sappenfield, Miami, Fla.	Educational Needs—Anesthesiologist's Response
1956	John S. Lundy, Rochester, Minn.	New Drugs and an Era of Analgesia and Amnesia

A total of 203 papers have been presented at the scientific sessions of the Section from 1941 to 1956, inclusive. The number of papers is, of course, more or less limited by the length of the scientific session and by whether or not a joint session is held. Generally speaking, there has been an increase in the average number given during the past five years.

The number of scientific exhibits in the Section on Anesthesiology likewise shows a definite average increase during the past five or six years. However, the facilities available, depending upon where the meeting was held, have had a definite influence on the number of scientific exhibits presented. A total of 115 exhibits have been presented, not including those of the 1957 session. Table 2 gives the number of papers and exhibits presented by year since the formation of the Section. The following awards have been made to exhibits in the Section on Scientific Exhibits: Honorable Mention to 10 exhibits; Certificate of Merit to 6 exhibits; Bronze Medal to 2 exhibits; Certificate of Appreciation to 2 exhibits; and Special Commendation to one exhibit.

Table 2.—*Scientific Papers and Exhibits*

Yr.	Papers	Exhibits
1941	12	8
1942	14	7
1944	14	6
1946	15	6
1947	13	6
1948	11	4
1949	15	10
1950	13	6
1951	15	10
1952	17	12
1953	16	8
1954	14	5
1955	12	14
1956	19	13

Attendance at the scientific sessions has been maintained very well when compared with some of the other sections. A review of the attendance record of the Section meetings since 1944 reveals a very satisfactory picture. While many other sections have suffered a marked decrease, our Section has been able to maintain or increase our attendance in most sessions, as indicated in table 3.

From the brief picture presented here, I am sure we will all agree that the activities of the Section have played a very important role in the over-all development and advancement of our specialty.

Our Present Needs

The work of our founders has established the sound foundation of technique and knowledge essential to a major increase in the margin of safety and comfort for every surgical and obstetric patient. Yet we cannot say that the full benefits of such technique and knowledge are being applied to every patient. Great gaps exist in training and recruiting. Many hospitals still have no anesthesiologist on the staff, and others have only one or two qualified men. It is probable that only from one-third to one-half of the anesthesia for surgical and obstetric procedures is administered by physicians with specialized training.

We have not nearly the knowledge that we desire, but we have the background today to make tremendous progress in the improvement of the patient's safety. The problem is that this knowledge and the benefits of all available techniques are not available to each patient in our hospitals. We recognize the importance of new pharmaceuticals and new equipment, but we know that there is no substitute for experience and technique in our highly demanding field of medical practice. The public generally and even colleagues in our own specialty are not adequately aware of this. Speaking frankly, many both inside and outside our specialty still have little idea of this growth and development, or of its full impact on medical practice.

I often think that one of our greatest needs today is for even greater cooperation with other branches of medicine, to make sure that our colleagues understand the implications of recent developments in anesthesiology and are made fully aware of the possibilities inherent in the knowledge and techniques which have been developed. We read of the heroic rescues occurring when a heart has stopped under anesthesia. But we often fail to think of the hearts that go on firmly beating, because the qualified anesthesiologist recognizes the danger signals and prevents emergencies before they occur. I do not suppose that "inadequate anesthetic technique" has ever been put down on any hospital's records as the cause of death in the operating room. I am not sure that it would be recognized as the cause in many instances. We are often prone to shrug off the unexpected as an inevitable part of medical practice and to oversimplify the problems that actually can be involved in the most minor procedures.

TABLE 3.—*Attendance Record at Section Meetings*

	Session		
Yr.	1st	2nd	3rd
1945	120	160	250
1946	105	145	120
1947	210	150	120
1948	131	129	163
1949	186	148	290*
1950	175	189	644*
1951	225	183	160*
1952	255	228	164*
1953	214	193	182
1954	172	158	225*
1955	216	940*	95
1956	202	191	176

* *Joint Session.*

In other words, anesthesiology involves an increasingly complex knowledge of pharmacology and physiology. It can contribute to the margin of safety in any procedure, no matter how major or minor. But much of this knowledge is comparatively new to the specialty and to the profession generally. That is why we have an increasing responsibility to inform others about the why and the how of our activities.

This group, the Section on Anesthesiology, has a primary opportunity and responsibility to explain the techniques and possibilities of anesthesiology to our colleagues in other fields of medicine. What have we learned? What can we offer? What are our problems? What evidence can we offer to support our claims of progress made? What are we doing to build understanding of our efforts?

We have done much to answer these questions and others like them. But have we done enough? Do we sometimes take it for granted that a fellow physician knows as much as we do about a field in which we have spent years? I think we do.

When we realize that comparatively little training was available even for anesthesiologists a relatively few years ago and that the bulk of progress in our specialty has occurred within just 10 years, it becomes apparent that there must be a vast lack of knowledge about the newer techniques and the vast weight of recent findings in anesthesiology.

Physicians in other fields and other specialties are not going to tell one another about anesthesiology. This is our job. If we do not explain what we are doing, no one will know. As individuals, in our own hospitals and in our own communities, and as members of organized national groups, working with other segments of medicine, we must remember that explaining the needs, the objectives, and the possibilities of adequate techniques in anesthesiology is a continuing and a never-ending job.

Our goal of adequate anesthesiological care for every patient is within sight. However, this is the time not to lower our sights but to recognize that the foundation now existing means that our efforts to build understanding and attract qualified men must be redoubled if we are to attain the full potential of the opportunity within our grasp for increasing the comfort and safety of tens of millions of patients who will come to the nation's hospitals in the years ahead.

A Look to the Future

I would like to see a permanent home established which could adequately house all of the activities pertaining to the specialty of anesthesiology. Such a home could do much to increase the efficiency of our efforts. It is and should be considered the duty of each anesthesiologist to aid in the preservation of the history of our specialty.

The Wood Library-Museum is a great tribute to our specialty and is deserving of a permanent home. It is my hope that all individuals interested in anesthesiology, together with the Board of Trustees of the Anesthesia Memorial Foundation, will see fit to assert their efforts and energies in that direction.

Let there never cease to be a spirit of competition among us. Complacency can be the ruin of our own mind, our own section, our profession, or our own country and government. Our own freedom can be lost through complacency.

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GENERAL OROTRACHEAL ANESTHESIA FOR BRONCHOSCOPY

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The general orotracheal anesthesia here described has many advantages over the topical anesthesia that has been traditional in bronchoscopy. The new technique as applied to the average adult includes premedication, about an hour before the time set for induction, by the intramuscular injection of 100 mg. of meperidine, 0.6 mg. of scopolamine, and 50 mg. of diphenhydramine. Induction consists of intravenous injection of 150 to 200 mg. of thiamylal followed rapidly by 40 mg. of succinylcholine; then an orotracheal tube is inserted and used for the administration of a 2 to 1 mixture of nitrous oxide and oxygen. Certain modifications are used in very old and very young patients. After experience with an initial series of 100 bronchoscopies with curare as the relaxant it was found that succinylcholine was much better, and it has been used in a second series of 100 bronchoscopies. The new technique has also been adapted for use in other surgical procedures that require excellent relaxation for short periods of time. It provides safety and comfort for the patient, permits the surgeon or bronchoscopist to do much better work, and reduces the emotional strain on all concerned.

General orotracheal anesthesia for bronchoscopy is presented as a solution to one of the most difficult problems which infrequently confronts the anesthesiologist in a varied surgical practice. Traditionally, bronchoscopy as taught and practiced in the major medical centers of the United States is performed with the patient under topical anesthesia. This, however, has some undeniable drawbacks which limit its usefulness. First, topical anesthesia has a small but definite and presumably irreducible toxicity of its own. Second, bronchoscopy performed in this manner is uncomfortable and even terrifying to a significant number of patients. Third, the inability of these patients to compose themselves and to relax sufficiently often makes the operative maneuvers of the bronchoscopist difficult and occasionally even dangerous. Fourth, this obvious torment and fright of the patient may make the operator nervous, tense, and hurried in the performance of a task which requires a calm, relaxed, and methodical artisan. And last, the combination of all these factors makes both physician and patient loath to undertake the frequent contingency of repeated examinations.

Because of these admitted shortcomings in the anesthesia technique currently used for bronchoscopy, it is quite understandable that requests for general anesthesia for this procedure have, during the course of years, become more frequent and more insistent both from the patient and from the operator. Upon receipt of these requests it was my custom to make a medical estimate of the anesthesia situation and then to proceed with the more or less routine anesthesia technique used for short surgical procedures. This technique consisted of premedication with meperidine (Demerol) hydrochloride, scopolamine, and diphenhydramine (Benadryl) hydrochloride, followed by induction of sleep with thiopental and relaxation of the vocal cords with curare. After the bronchoscope had been passed into the trachea, oxygen was insufflated through the sidearm in the usual manner.

It was soon learned that this technique was not completely applicable to the problem. A relatively large dose of thiopental was often necessary to keep the patient asleep and, as a result, prolonged post-examination respiratory depression was the rule. Laryngospasm, bronchospasm, and the so-called tight chest reaction were all too common concomitants of the introduction of the bronchoscope. In these instances it was impossible to inflate the lungs. Soon thereafter there would appear, in quick succession, hypertension, bradycardia, and cardiac arrhythmia, the cardinal signs of asphyxia. Upon withdrawal of the bronchoscope it was often necessary to keep the patient in the operating room for 30 to 60 minutes under close personal surveillance before it was deemed safe to discharge him from the surgical suite.

Many of these patients with chronic lung pathology and violent bouts of coughing are most difficult to anesthetize safely by any technique. The additional insult of the foreign bronchoscope superimposed on the already disordered ventilatory mechanism, plus the barbiturate-induced respiratory depression and the curarized musculature, was the ultimate hindrance to rapid and safe recovery from anesthesia. It was obvious that this technique was far from satisfactory. Nonetheless, with no better pharmacological substitute apparent in my armamentarium, I continued to use it for about two years. It was about six years ago that Dr. Leo Cigarroa

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Chief, Anesthesia Department, Mercy Hospital.

Read before the Section on Anesthesiology at the 106th Annual Meeting of the American Medical Association, New York, June 6, 1957.

and I began a series of studies with the definite goal in mind of developing a nonexplosive general anesthesia technique for bronchoscopy which would obviate the disadvantages I have enumerated and would not increase the danger of the procedure over that inherent in the bronchoscopy itself. Dr. Cigarroa performed all of the bronchoscopies in this series. His complete cooperation and constant encouragement was the potent *vis a tergo* to my efforts.

Development of Orotracheal Tube Technique

The first change in technique was the substitution of thiamylal for thiopental in the hope of reducing the incidence of patients who experienced ventilation difficulty during and immediately after examination. It was our impression at that time that with thiamylal the recovery period was somewhat shortened and that the "tight chest" reaction had become a little less frequent. In retrospect, I am not certain that either of these impressions was valid.

The next improvement in technique was the major innovation and is the central theme of this paper. It came about purely by happenstance and, although I would like to be able to state that it was the result of considerable deep thinking on our part, I would be belying the facts to say so. What actually happened was this. One particular candidate for bronchoscopy was a bull-necked, hypersthenic, and emphysematous ranch foreman who was in his middle fifties and weighed well over 200 lb. (90.7 kg.). After premedication, induction, and relaxation in the usual manner, the bronchoscope was passed. At that moment the patient reacted with the response most pointedly characterized by our British colleagues as the response to the "ill-met triad" of a foreign body in the upper respiratory tract, hyperpnea, and an irritable focus in the lower respiratory tract. The patient took a deep breath and then attempted to cough the bronchoscope out of his trachea. This disordered cough reflex ended with a completely spastic chest in the position of full expiration. The pulse became rapid and bounding and then slowed. The patient's color went through the spectrum of blues to black. Within two minutes his condition had deteriorated so markedly that I had no difficulty in persuading Dr. Cigarroa to withdraw his instrument. A child-sized endotracheal tube (no. 4 Magill Portex) was tortuously inserted into the larynx, and we were able to inflate the patient's lungs sufficiently to overcome his spasm and to revert his precarious condition to an apparently normal state. I casually mentioned to Dr. Cigarroa how nice it would be if we could leave the endotracheal tube in place during the bronchoscopy. Neither of us had ever seen or heard of this having been done before, but we could see no harm in attempting it. He introduced the bronchoscope into the pharynx and larynx and, much to his amazement and our mutual delight, he found that it was actually easier to pass the instrument with the endotracheal tube in place than it had been to do so previously without it. This was an unexpected but most welcome development, for we had inadvertently stumbled on a technique which not only provided ample ventilation for the patient but also actually facilitated the work of the bronchoscopist.

After this incident we adopted endotracheal intubation as the core of our standard technique. It was used quite successfully in over 100 consecutive and unselected bronchoscopies. The only disadvantage which we encountered in this method was that in a fair incidence of patients a shallow and irregular breathing pattern persisted. This sequela always necessitated the maintenance of intratracheal oxygenation with intermittent positive pressure for some 30 minutes after the bronchoscopy. We believed that this was caused by residual curare action and we were able to test this theory with the advent of succinylcholine into our armamentarium. Our excellent results with this agent bore out the validity of this hypothesis. The substitution of this drug for curare as the muscle relaxant of choice for this particular procedure has been our last change in technique. The remainder of this paper will describe in detail the steps in this technique as it has been found to be most satisfactory in a second series of somewhat over 100 consecutive and unselected patients.

Procedure

The average adult patient is premedicated about one hour before the time of induction by the intramuscular injection of 100 mg. of meperidine, 0.6 mg. of scopolamine, and 50 mg. of diphenhydramine. The patient, when brought to the operating room, is kept on his stretcher to conserve both time and labor. All instruments and connections are checked and the induction is begun with both physicians in immediate attendance. Injection of 150 to 200 mg. of thiamylal intravenously is rapidly followed by injection of 40 mg. of succinylcholine. As soon as the jaw can be opened a no. 4 Magill Portex tube is passed from the right angle of the mouth into the now patulous larynx. At this time the paralaryngeal fossae, the epiglottis, the glottis, and the vocal cords can be inspected to ascertain the presence or absence of foreign bodies or pathological processes. Next, the tube is secured firmly to the lower lip and chin with one strip of adhesive tape. It is then connected to the anesthesia machine and a 2 to 1 mixture of nitrous oxide and oxygen is administered at a rate of from 4 to 8 liters per minute, sufficient to assure adequate exchange and washout. Positive pressure is administered until the patient takes over with his own forces.

As soon as the orotracheal tube is fixed in position, the operator passes his bronchoscope over the tongue until the uvula comes into view. At this time he can usually locate the orotracheal tube as it appears from the right side of his field of vision. The instrument is manipulated so as to follow the tube as a guide which it passes either alongside of or behind into the larynx and trachea. As soon as the carina is visualized the necessary examinations are meticulously and dexterously performed.

Toward the end of a simple diagnostic bronchoscopy the patient is usually moving his arms and legs, and upon withdrawal of the bronchoscope and the tube he may cough a few times; by then he is awake enough to respond to questions. He is then returned to his room. The total time spent in the operating room averages seven minutes for the usual adult who has been subjected to a routine inspection bronchoscopy.

In the less usual cases where the bronchoscopy lasts more than five minutes the technique may be slightly modified. If the patient remains quiet, maintenance can be continued with the nitrous oxide-oxygen overflow. If he becomes too active, however, the dose of muscle relaxant can be repeated. In very prolonged cases, the continuous drip administration can be utilized to advantage. We have never found it necessary to repeat or augment the original dose of thiamylal, and no patient has ever complained of any recollection associated with the endoscopy.

The central principle of this orotracheal tube technique can be carried over into geriatric and pediatric anesthesia, but germane modifications must be made in the selection of agents and dosages. Those patients in the age group from 65 to 70 are premedicated with 75 mg. of meperidine, 0.4 mg. of atropine, 35 mg. of diphenhydramine. As we go upward into the 70 to 75 year age group this dosage is further reduced to 50 mg. of meperidine, 0.3 mg. of atropine, and 25 mg. of diphenhydramine. Above 75 years of age we use 20 mg. of codeine, 0.2 mg. of atropine, and 25 mg. of diphenhydramine. In the administration of the anesthetic proper to this geriatric range of patients we find it but rarely necessary to alter the standard adult dosage of thiamylal and succinylcholine. Similarly, the no. 4 Magill Portex tube provides for satisfactory tidal exchange, and it may be used to advantage in all of these elderly people.

As we go downward through the pediatric end of the anesthesia scale we find it increasingly imperative to tailor the premedication, the anesthesia, and the size of tube to the age and physical status of the individual patient. In general, patients from 14 to 10 years of age are premedicated with 75 mg. of meperidine, 0.4 mg. of scopolamine, and 35 mg. of diphenhydramine. The usual adult dosage of thiamylal and succinylcholine is given to this group of children, but the size tube used may be dropped from no. 4 to no. 3 Magill. Patients from 9 to 6 years of age are premedicated with 50 mg. of meperidine, 0.3 mg. of atropine, and 25 mg. of diphenhydramine, and the size tube is further decreased to no. 2 Magill. These patients usually require only 100 mg. of thiamylal for sleep and 20 to 30 mg. of succinylcholine for relaxation. Nitrous oxide–oxygen is utilized in the same manner as for routine bronchoscopy in adult patients.

In patients beneath the age of 6 the ventilation problem becomes acute, because of the increasingly diminishing cross sectional area of the glottic and subglottic spaces. A 6-mm. by 35-cm. or even a 4-mm. by 30-cm. bronchoscope leaves very little unoccupied space for the orotracheal tube. In the management of these children we routinely insufflate oxygen through the sidearm of the bronchoscope, even with the orotracheal tube in place. We are constantly alert to the possibility of compression of the necessarily small tube by the constantly changing direction and pressure of the bronchoscope as it responds to the maneuvers of the operator. One item in the preparation of the tubes has been found to be significantly useful in the minimizing of this ever-present danger. If the tubes are sterilized repeatedly by immersion in any of the antiseptic solutions generally used in the operating room they will soon harden and resist changes in shape and diameter. They are then far safer to use. When the desired degree of hardness has been attained, further sterilization may be accomplished by autoclaving. This prevents the tubes from becoming too brittle and hard, thereby unnecessarily increasing the difficulty and trauma of their passage into the larnyx.

Children from 6 to 4 years of age are premedicated with 20 mg. of codeine, 0.2 mg. of atropine, and 20 mg. of diphenhydramine. No barbiturate is administered to them. Instead they are induced into light sleep with nitrous oxide and oxygen in the ratio of 2 to 1 via face mask and closed circuit technique. Succinylcholine, 10 to 15 mg., is injected intravenously, a no. 1 Magill tube is passed, and anesthesia is maintained through it. Children from the age of 4 to 2 are premedicated with 10 to 15 mg. of codeine, 0.1 mg. of atropine, and 10 to 15 mg. of diphenhydramine. Induction of anesthesia is the same as that for the 4 to 6 year age group. Succinylcholine, 5 to 10 mg., is given intravenously and a no. 0 Magill tube is used for ventilation.

In patients under the age of 2 the oxygenation and ventilation problems become truly critical. In addition to the anatomic difficulties we encounter in these patients, we find that most of them also have partial obstruction by foreign bodies in the bronchial tree. As a result, most of these patients are extremely ill with uncountable pulse rates and with respiratory cycles in the neighborhood of 100 per minute. These patients are given only 100% oxygen through the no. 0 Magill tube and through the sidearm of the bronchoscope. Ordinarily, we neither premedicate nor anesthetize these infants with any of the fixed agents. They are controlled with repeated small doses of succinylcholine which average about 0.25 to 0.33 mg. per pound of body weight. This dosage must be sufficient to maintain relaxation and to facilitate ventilation. Occasionally, some of the more sturdy of these infants may require the administration of nitrous oxide-oxygen, 2 to 1.

It cannot be stressed too strongly that the respiratory and cardiac action of all these unfortunate children must be constantly monitored through the entire procedure by means of a stethoscope placed over the apex of the heart. Frequent withdrawal of the bronchoscope is mandatory to maintain the precarious physiological equilibrium. The attending anesthesiologist must realize the gravity of his responsibility for these patients. He must accept the premise that they are surely marked for death unless the exhibition of his skill and that of the bronchoscopist, can be combined to rescue them from their otherwise certain fate.

One further comment is now pertinent. The wheel of knowledge has turned full circle. We started our series of studies by using routine minor surgical anesthesia for bronchoscopy. Now we are adapting r routine bronchoscopy anesthesia to many surgical p cedures which are of short duration but which r quire excellent relaxation. Among these may be lis esophagoscopy, particularly those for foreign bo reduction of minor fractures and dislocations; grown toenail and plantar wart procedures; pe examinations in difficult patients; anal dilations a removal of fecal impactions; and myringotomies a other incisions about the head and neck, particul in children.

Conclusions

The orotracheal anesthetic technique for bronch copy I believe best provides comfort and saf for the patient, ease and facility to the op and constant control of the patient by the anesthe ologist. It is my sincere hope that this presentati may spare other physicians and patients some of th mental anguish, emotion tension, and physical e haustion which spurred my co-worker and me on the development of the technique described.

CLINICAL NOTES

A SIMPLE, READILY AVAILABLE FINGER SPLINT

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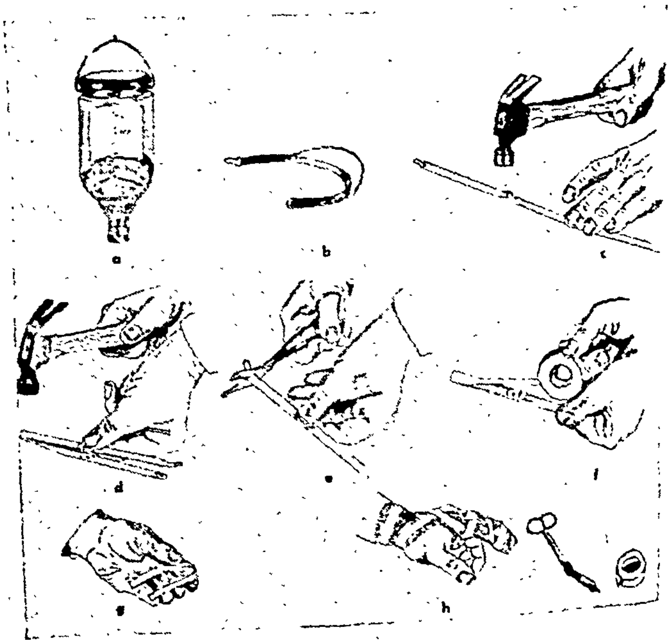
In operating rooms, emergency rooms, outpatient departments, and doctors' offices, there is often need for a finger splint. Ideally, a finger splint should be simple, readily available, and malleable and should possess sufficient strength to immobilize the affected part. The encircling metallic bail bands found on bottles of many brands of commercial intravenous fluid can be shaped easily and quickly into satisfactory finger splints that will satisfy these demands.

Since these splints can be made so easily and quickly and since the material is so abundant, it is usually quicker to make a new splint at each dressing than to salvage the original.

The metal bands are about 0.5 in. wide and 12 to 13 in. long. They have a large perforation at one end and are tapered at the other end. Two convexities are present, each with a small perforation to accommodate the supporting wire loop. To fashion a finger splint (see figure), the wire loop is removed and the two convexities flattened on the floor, or any other flat surface, by pounding with a sturdy metallic object such as a mallet or even a heavy pair of bandage shears. The tapered end is passed through the large perforation, the band is folded upon itself, and the crease is pounded flat. The double thickness is necessary for sufficient strength. The metal is soft so that the protruding tapered end can be cut away with bandag scissors, and if the splint is too long, as for a thum or a child's finger, it can be cut to the desired length The splint is then covered with adhesive tape and bent to the desired shape. It has been found useful to



Construction of simple finger splint.

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the splint over the finger so that it covers the r and dorsal surfaces, thus adding to the security nmobilization and offering protection from trauma n injured or painful digit. If the splint is applied a bandage fashioned after that illustrated by guson,[1] a secure, well-fitting finger dressing can be ined.

n applying the bandage, a 4-by-8-in. piece of gauze ut long enough to cover the finger from front to k. The gauze is then cut lengthwise through slight- nore than half of its length in four 1-in. strips. This pplied to the finger, folding the ends over the tip as uncut end of the gauze is wrapped around the er. The gauze is held in place by a 1-in. roller ndage passing up and down the finger and over the and also over the dorsum of the hand and around wrist, in a figure of eight. The entire bandage, ecially that about the wrist, can be reinforced with 0.5-in. tape to prevent rolling of the gauze bandage and to avoid affixing tape to the skin. The splint is applied over the bandage and held in place with circular strips of 0.5-in. tape. This dressing and splint will not slip off the finger and offer maximal protection to the part.

This type of splint is adequate for superficial lacerations in which the deeper structures are not injured. It is useful for immobilization in fingertip amputations and fractures of the distal phalanges. It is not recommended as a method of immobilization after nerve or tendon repairs. It is not recommended as a method of fixation for digital fractures or joint disorders.

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LE OF BRONCHOSCOPY IN THE PREVENTION OF POSTOPERATIVE ATELECTASIS

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ronchoscopy is resorted to frequently in the treatnt of postoperative atelectasis, but, with the single ception of intrathoracic surgery, bronchoscopy is ely used to prevent postoperative pulmonary comcations. The purpose of this paper is to evaluate role of bronchoscopy in the prevention of posterative atelectasis.

The incidence of atelectasis from a number of urces varies between 3 and 50% of all postoperative nplications.[1] The history, etiology, and general thods of prevention and treatment of postoperative lectasis have been discussed elsewhere.[2]

It is generally agreed that adequate tracheal toilet extremerly important in the prevention of posterative pulmonary collapse. Most anesthesiologists pend upon catheter suction through an endotracheal heter or voluntary coughing by the patient to insure lear airway.

Greene[3] has pointed out that the most effective ansing of the lower respiratory tract is obtained th endotracheal suction when the patient is capable responding with his most vigorous cough effort. is technique is referred to as “synergistic aspiran.” Synergistic aspiration is quite an effective means clearing the tracheobronchial tree, provided that the tient is able to cough vigorously. The patient who s undergone prolonged major surgery is often unable to produce even a weak cough, catheter stimulation notwithstanding. It is especially difficult for the elderly, debilitated patient to cough vigorously and expel secretions from the tracheobronchial tree.

Synergistic aspiration is equally ineffective in the patient with persistent vomiting secondary to intestinal obstruction or gastric dilatation. These patients are very apt to aspirate gastric contents prior to surgery and perhaps even during anesthesia and surgery.

In order to prevent postanesthetic pulmonary atelectasis in this group of patients, I have felt that sure and vigorous tracheobronchial aspiration in the immediate postoperative period is necessary.

Selection of Patients

Patients were selected for immediate postoperative bronchoscopy according to the following criteria.

Physical Status and Age of the Patient.—Bronchoscopy was used for elderly and/or debilitated patients who had undergone major intra-abdominal surgery if the duration of anesthesia and surgery was longer than two hours.

Duration of Anesthesia and Surgery.—Regardless of the physical status of the patient, bronchoscopy was carried out if the duration of anesthesia and surgery was four hours or more and the surgical procedure was intra-abdominal, radical neck and breast, or intrathoracic.

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Probability of Aspiration.—Where there was a probability of aspiration, as in the case of patients undergoing emergency surgery for intestinal obstruction or gastric hemorrhage, bronchoscopy was performed.

Excessive Secretions.—Bronchoscopy was used for some patients who did not fall into the above categories if the anesthesiologist felt that there was excessive secretion present in the tracheobronchial tree at the conclusion of surgery and anesthesia.

Bronchoscopy was performed in a total of 40 patients conforming to the criteria described above. Of these 40, 12 patients were in the elderly-debilitated class, 20 in the prolonged surgery class, 6 in the probability of aspiration class, and 2 in the excessive secretions class. Some of the patients could have been classified into either of two categories; for example, the elderly, debilitated patient who undergoes surgery for intestinal obstruction. For the sake of clarity, however, I have listed the patients according to what I felt to be the major indication for bronchoscopy.

The nature of the surgery performed on the patients bronchoscoped and the distribution is as follows: 13 patients were operated on for gastric surgery; 3, esophageal surgery; 9, lung surgery; 2, laparotomy for secondary hemorrhage; 4, intestinal obstruction; 3, colon surgery; 1, gall bladder surgery; 1, radical neck; 1, tumor of mandible; 2, bilateral lumbar sympathectomy; and 1, nerve section.

Procedure

Bronchoscopy was carried out in the usual manner except that, if an endotracheal tube was used for anesthesia (an endotracheal tube was used in the great majority of the patients), the tube was allowed to remain in place while the glottis was being visualized through the bronchoscope. One hundred per cent oxygen was administered via the endotracheal catheter by an assistant. As soon as the bronchoscopist had visualized the epiglottis, the assistant removed the endotracheal tube and the bronchoscope was passed into the trachea. Oxygen was administered through the side piece of the bronchoscope at a rate of 15 liters per minute. The remainder of the procedure was carried out in the usual manner.

Results

Of the 40 patients in whom bronchoscopy was carried out, one patient subsequently developed an obstructure atelectasis. This patient had severe asthma and had undergone subtotal gastrectomy. The duration of surgery was 6 hours, 30 minutes. At bronchoscopy it was noted that the patient had a copious amount of viscid secretion. In spite of the bronchoscopic procedure and vigorous "stir-up" action, the patient developed obstructive atelectasis.

In a number of instances, bronchoscopy was carried out after catheter suction through the endotracheal tube. It was interesting to note that, in spite of the catheter suction, large mucous plugs remained in the tracheobronchial tree. These mucous plugs were removed at bronchoscopy. There were no compli which could be ascribed in any way to the choscopic procedure.

Comment

In a group of patients who undergo prolonged surgery, one would expect to find a high incide postoperative atelectasis, especially if these pa are elderly and debilitated.[4] The fact that only patient in our group developed postoperative a tasis can be attributed largely to the effective cl ing of the tracheobronchial tree by bronchoscopy.

I am in complete agreement with Gordon, states, "Suction drainage of the tracheobronchial under direct vision through the bronchoscope is most efficient and at the same time the least trau of the methods available for the relief of bron obstruction."[5]

My views differ from Gordon's only in that I that bronchoscopy should be carried out, in the g of patients that I have described, immediately a conclusion of surgery instead of waiting until th tient develops clinical signs of atelectasis.

The administration of 100% oxygen throug endotracheal tube up until the moment that the choscope is passed into the trachea and the c administration of a high flow-rate of oxygen th the bronchoscope greatly diminish the possibil hypoxia during the bronchoscopic procedure.

It is important to stress that bronchoscopy cannot be depended upon to prevent atelectasis cases. One must still conform to all the precept have been outlined for the prevention of atelect the postoperative period such as early ambu deep breathing, and coughing.

The fear of wound evisceration might deter physicians from using bronchoscopy. In this reg is interesting to note that none of our patien veloped wound evisceration.

The importance of preventing postoperative p nary complications by all reasonable means cann overemphasized, especially when one conside high incidence of these complications and the that the patient pays in terms of morbidity and tality.

In those instances where atelectasis is most l occur, bronchoscopy can be of definite aid in venting its development.

Summary

Bronchoscopy in the immediate postoperative iod was performed on patients who were partic likely to develop atelectasis. The results indicate bronchoscopy is of definite value in the preve of postoperative atelectasis in this group of patie

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VALUE OF HYPOTHERMIA DURING AORTIC OCCLUSION

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and
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During the past few years the value of hypothermia affording protection to vital tissues during circula- y occlusion has been cited in numerous articles. It becoming a recognized procedure for certain cardio- scular and neurosurgical operations. The two prin- al complications subsequent to clamping the racic aorta are rapid dilatation and failure of left ntricular action and permanent damage to the spinal rd or kidneys due to ischemia.[1] Cooling animals to to 30 C (78 to 86 F) has prevented this heart fail- e and lesions of the extremities.[2] The following case port is presented to show that, although moderate pothermia (reduction of temperature to 31 C [88 F]) d not prevent cardiac failure secondary to a clamp ing placed on the thoracic aorta for 50 minutes, it d afford complete protection of the kidneys and inal cord during this period of total circulatory oc- ision and the following hour of relatively insufficient od flow.

Report of a Case

well-developed female, 20 years of age, was admitted to ke Hospital on July 9, 1956, complaining of increasing akness, shortness of breath, and nervousness. An x-ray taken months previously for an acute lower respiratory infection wed a mediastinal mass just below the aortic arch.

hysical examination on this admission was normal except a grade 2 systolic murmur over the pulmonary area, ex- ding into the neck and varying in intensity with change of ition. The pulmonic second sound was snapping in character l louder than the aortic second sound. The heart was not arged on x-ray examination, and the electrocardiogram wed normal rate and rhythm. Angiocardiography demon- ted a filling defect of the descending aorta just below the arch. Complete laboratory examination revealed no abnormalities. The final diagnosis was aneurysm of the descending aorta.

Operation was performed on July 14, 1956. The premedication of meperidine (Demerol), 100 mg., and secobarbital (Seconal), 100 mg., was given at 8 a. m. Oxyphenonium (Antrenyl), 0.2 mg., was administered intravenously at 8:45 a. m. and a transtracheal injection of 2 cc. of 5% hexylcaine (Cyclaine) was performed. At 9 a. m. induction was accomplished smoothly with 2% thiamylal (Surital), 160 mg., and cyclopropane-oxygen. At 9:05 a. m., after succinylcholine (Anectine), 60 mg., was administered and 10% cocaine was applied topically to the larynx, an orotracheal tube was introduced without any disturbance noted on the electrocardiogram. Throughout the entire procedure continuous electroencephalographic and electrocardiographic tracings were recorded by means of an Edin Anesthograph. Maintenance administration of nitrous oxide–oxygen–cyclopropane with a trace of ether was started by the semiclosed, carbon dioxide–absorption technique, and hypothermia was induced by the application of ice bags.

Surgery began at 9:45 a. m. The rectal temperature then was 35.8 C (96 F), the blood pressure 110/60 mm. Hg, and pulse rate 78 beats per minute. The left hemithorax was entered through the fourth intercostal space and the aneurysm dissected. At 11 a. m., when the rectal temperature reached 34 C (93 F), administration of cyclopropane was discontinued and anesthesia maintained with nitrous oxide, 50%; oxygen, 50%; a trace of ether; and a slow drip of 0.1% succinylcholine. Controlled respirations were found necessary to maintain an adequate tidal volume. At 33 C (91 F), the nitrous oxide was eliminated from the mixture. It was now 12 noon and the blood pressure was 90/60 mm. Hg and pulse rate 60 beats. The electrocardiogram showed no abnormalities except for a bradycardia, and the electroencephalogram revealed level 3, or upper first-plane, anesthesia.

At 12:55 p. m., after complete dissection of the aneurysm, clamps were placed on the aorta distal to both the subclavian artery and the aneurysm. Plication of the aneurysmal wall was begun. Rectal temperature now was 31.5 C (88 F). Immediately after the aortic occlusion the blood pressure rose from 80/60 to 160/100 mm. Hg and pulse rate increased from 50

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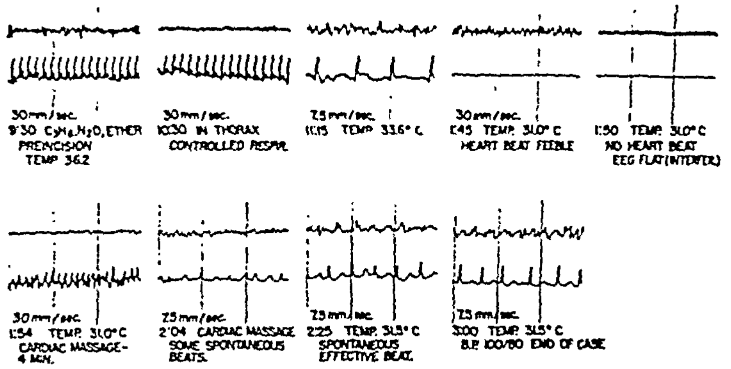
beats per minute to 90 per minute. This elevation was followed by a gradual decline in blood pressure to 80/60 mm. Hg, with a pulse rate of 70 beats at 1:40 p. m., and to a pressure of 0/0 mm. Hg, with no palpable carotid pulse, at 1:45 p. m. Rectal temperature was read at 31 C. Blood replacement of 1,000 cc. was believed to be adequate.

The exposed heart was examined immediately and found to have a weak, ineffective ventricular action with fibrillation of both auricles. The electrocardiogram showed no organized electrical activity, while the electroencephalogram became flat.

The pericardium was opened, cardiac massage instituted, and the aortic clamps removed. Within four minutes activity returned on the electroencephalographic tracing (see figure), and in seven minutes the electrocardiogram showed a nodal rhythm. Two thousand cubic centimeters of blood was pumped in over a 20-minute period, and rewarming was started with hot water bottles, warm blankets, and warm saline perfusion of the open chest cavity. The heart was seen to be beating regularly, but no blood pressure could be obtained until 2:45 p. m., when it was 70 mm. Hg, with a regular pulse rate of 100. During this time the electroencephalogram showed an increasing amount of activity (see figure).

Spontaneous respirations returned at 2:35 p. m. and were felt to be adequate at 2:55 p. m. when the chest was closed and the patient extubated. Assisted respirations with high oxygen concentrations were being maintained when marked retraction of the chest on inspiration developed rapidly. At 3:15 p. m. bubbling rales were heard throughout both lung fields and pulmonary edema was diagnosed. The patient was reintubated at once with a nasotracheal tube. Aspiration of the tracheobronchial tree was alternated with positive-pressure administration of oxygen during both inspiration and expiration. Lanatoside C (Cedilanid), 0.8 mg., was given intravenously and phlebotomy was performed, with 1,000 cc. of blood being let. Rectal temperature was now 32 C (90 F), blood pressure 100/90 mm. Hg, and pulse rate 100 beats per minute.


30 mm/sec.
9:30 C_3H_6,N_2O,ETHER PREINCISION TEMP 36.2
30 mm/sec.
10:30 IN THORAX CONTROLLED RESPIR.
7.5 mm/sec.
11:15 TEMP 33.6° C
30 mm/sec.
1:45 TEMP 31.0° C HEART BEAT FEEBLE
1:50 TEMP 31.0° C NO HEART BEAT EEG FLAT (INTERVER)
30 mm/sec.
1:54 TEMP 31.0° C CARDIAC MASSAGE-4 MIN.
7.5 mm/sec.
2:04 CARDIAC MASSAGE SOME SPONTANEOUS BEATS.
7.5 mm/sec.
2:25 TEMP 31.5° C SPONTANEOUS EFFECTIVE BEAT.
7.5 mm/sec.
3:00 TEMP 31.5° C B.P. 100/80 END OF CASE

Electroencephalographic and electrocardiographic tracings during thoracotomy for plication of descending aortic aneurysm under hypothermia. Flattening of electroencephalogram is seen during period of circulatory failure, with return of electrical activity four minutes after institution of cardiac massage.

The patient gradually improved with this treatment and at 5:30 p. m. appeared alert, was able to move all extremities, and responded to questioning. At this time the rectal temperature was 34.4 C (94 F), blood pressure 100/90 mm. Hg, and pulse rate 100 beats per minute. At 7:30 p. m. the temperature had returned to normal, 37.5 C (99 F), and the blood pressure had stabilized at 100/90 mm. Hg and the pulse rate at 100 beats per minute. The patient had now received a digitalizing dose of lanatoside C (1.6 mg.), and the electrocardiogram showed auricular flutter and ventricular tachycardia. The chest x-ray showed marked clearing of the lung fields, which had been densely mottled on the 3:30 p. m. film. Urine output to this time was 100 cc. During the night an O. E. M. positive-pressure mask, providing 2 cm. H_2O pressure on exhalation, was utilized intermittently. By the next morning the patient was comfortable in an oxygen tent. Urine output remai 50 to 90 cc. per hour, and no evidence of cerebral or cord damage was noted. X-ray of the chest was clear, a electrocardiogram showed mild T-wave changes suggest myocardial injury. Results of blood chemistry studies we normal, with a nonprotein nitrogen level of 36 mg. per 10

The patient improved rapidly and was discharged o 10th postoperative day. She has been seen in the outp clinic on two occasions since and has remained in health, with no residual evidence of her prolonged episo hypotension and anoxia.

Comment

The occurrence of failing cardiac action d total occlusion of the thoracic aorta has been repo in the literature.[3] It is apparent that in this case intrinsic reserve of the heart was unable to compens for the additional work load imposed by the cl immediately distal to the left subclavian artery. R leasing the clamps and manually assisting ventric systoles restored discernible blood pressure after hour. Although the auricles were fibrillating dur this period, no increased irritability of the ventric was seen or recorded. This observation concurs w present-day beliefs that temperatures above 30 (86 F) are not prone to increase excitability of t myocardium.

The development of pulmonary edema was d to overloading an already weakened heart by t rapid infusion of 2,000 cc. of blood during the peri of circulatory failure. The blood had been given in effort to augment venous return to the heart. The s uation was corrected by rapid digitalization, ph botomy, and positive-pressure administration of ox gen on inspiration and expiration.

It is believed that this case demonstrates, as not by others,[4] the value of moderate hypothermia in s gery of the aorta. The adequate and maintained urin output immediately after restoration of blood pressu along with the lack of evident kidney damage in t postoperative period, indicates that the kidneys we protected by the reduction of temperature to 31 C f 50 minutes of total circulatory occlusion and the su sequent hour of relatively insufficient blood flow. T spinal cord and brain were apparently well guard as no paresis, change of reflexes, or mental deterio tion was demonstrated postoperatively. Under norm thermic conditions this amount of anoxia would pr ably have caused permanent dysfunction.[5]

The electroencephalogram was a reliable and sen tive indicator of cerebral circulatory failure in th patient. (Other writers [6] have also indicated its va in such cases.) At the time of the acute myocard collapse, the electroencephalogram flattened out i mediately. With manual cardiac massage the electri activity returned promptly, even though the blo pressure was unobtainable. In spite of hypotensi the relatively normal electroencephalogram can offered as additional evidence of the protection affo ed the brain cells by hypothermia during rela states of hypoxia. The immediate return of consci postoperatively with no disorientation confirmed electroencephalographic evidence of an undam-d brain.

lthough lowering the body temperature to 31 C not give protection against cardiac failure, it did serve the spinal cord, kidneys, and brain from the g period of hypoxia incurred during this operation. s believed that moderate hypothermia has a definite ce in the management of surgical procedures re-ring the interruption of blood flow through vital ans.

608 University Dr. (Dr. Stephen).

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Chronic Cough.—Chronic pulmonary disease appears to be increasing in both incidence and importance and, indeed, is held by some to be a major public health problem. This increase has occurred in spite of the effectiveness of antibiotic therapy in decreasing the complications of bacterial pneumonia and in reducing the occurrence of bronchiectasis. In addition, there have been significant advances in the treatment of pulmonary tuberculosis by medical and surgical methods, resulting in fewer pulmonary cripples from this disease. The increase in chronic pulmonary disease predominates in the group classified as chronic bronchitis and pulmonary emphysema has been noted in a previous study and commented on by others. The exact incidence of these entities is not known. Chronic bronchitis has been related to chronic infection of the lung from tuberculosis, fungus diseases, bronchiectasis, compression or obstruction of the bronchial tree with tumor aneurysm or lymph nodes, and allergy in the form of bronchial asthma. It is also attributed by some to chronic nonspecific bacterial infection. Inhalation of irritating dusts, fumes and smoke, including that from tobacco, has been considered to be of etiologic importance. There is definite information in regard to inhalation of some irritating substances and their effect on the bronchopulmonary tree, but the entire problem is not completely delineated. Industrial medical study has clarified the noxious character to the lungs of inhalation to certain dusts, such as silica and asbestos, and of various fumes, such as those containing lead, cobalt and berylium. Other dusts, for example, those causing anthracosis, have only recently become established as disease-producing agents. The problem of air pollution from smoke and fumes has attracted considerable attention in large cities. Commissions to undertake further investigation are in operation. The relation of inhalation of such industrial dust and smoke to the development of chronic bronchitis is under study. Exposure to inclement weather, marked temperature changes in the environment and the aging process have all been mentioned as causative agents of mechanisms in the production of chronic bronchitis.—A. M. Phillips, M.D., R. W. Phillips, M.D., and J. L. Thompson, M.D., Chronic Cough: Analysis of Etiologic Factors in a Survey of 1,274 Men, *Annals of Internal Medicine*, August, 1956.

SPECIAL ARTICLE

SOCIAL SECURITY FOR PHYSICIANS

3. SURVIVORSHIP BENEFITS—THE BAIT

Among physicians who are inclined to favor inclusion under the Old Age, Survivors and Disability Insurance provisions of the Social Security program, the main attraction seems to be the survivorship benefits. These have been cleverly exploited by the Physicians Forum and others as a special lure for the younger physicians thinking in terms of family protection.

In weighing the real value of these survivorship benefits, all doctors—especially the younger ones who might be paying Social Security taxes for 40 years or more—should keep the following facts in mind:

1. A widow with no dependent children under 18 receives no immediate survivorship benefits. She must wait until age 62 to get her widow's benefit, which would be a maximum of $81.40 per month.

2. A widow with dependent children receives survivorship benefits only until her youngest child reaches the age of 18. Thus, there is a "blackout period" between that time and the age of 62. For example, a woman whose youngest child was born when she was 30 would receive no benefits after the age of 48. She would have to wait 14 years to get her widow's benefit at age 62. The younger the mother at the time of her last child's birth, the longer will be the "blackout period" of no Social Security income.

3. A widow loses all her survivorship benefits if she remarries, or if she takes up substantial gainful employment. In the latter case she also has to pay Social Security taxes.

4. The Social Security tax rate, by law already enacted, is scheduled to increase in 1960, 1965, 1970, and 1975. Furthermore, numerous proposals now before Congress would require additional boosts in the amount of income taxable, the tax rate, or both. For those physicians who are intrigued by the survivorship benefits, the cost should be viewed in the light of these long-range tax increases, not just on the basis of the current Social Security tax.

5. The physician interested mainly in family protection can avoid the gaps and deficiencies of Social Security survivorship benefits through private insurance plans which will provide better, sounder, and cheaper coverage tailored to his family needs and his economic pattern of life.

The maximum survivorship benefit under Social Security is $200 monthly for a widow with two or more children under 18. A widow with only one child under 18 would get $162.80 per month. The monthly benefit would drop from $200 to $162.80 whenever the next-to-youngest child reached age 18. It would stop altogether when the youngest became 18. It would not be paid if there are no dependent children under 18. And for a family to get the maximum benefit of $200 per month for 18 years, a fully insured father would have to die immediately after the birth of twins.

The physician wanting Social Security coverage primarily for these survivorship benefits—and realizing that the vast majority of doctors will get little or no return from retirement benefits—must start with the fact that the current Social Security tax for the self-employed is 3⅜% on $4,200, or $141.75 per year. That, of course, is only the tax through 1959.

For the five years from 1960 through 1964 the tax rate will be 4⅛%, or $173.25 per year. The next five years, 1965 through 1969, will bring a tax of 4⅞%, or $204.75 annually. Then, from 1970 through 1974, the tax of 5⅝% would amount to $236.25 each year. Finally, from 1975 on the tax would be 6⅜%, or $267.75 per year. To repeat, these amounts are what a self-employed person would pay according to present law—without any further Social Security amendments that would raise the taxable base, the tax rate, or both.

Any physician who thinks that those are "bargain" rates for survivorship benefits alone would be wise to take a closer look at the cost of family income protection under private insurance plans. For example, Drs. Webster and Coffey in the first part of their two-part article on Social Security in the Sept. 15, 1956, issue of THE JOURNAL reported this:

> As a young physician, you can buy much better, guaranteed coverage for your family from private insurance companies. This you can do by purchasing decreasing term insurance (family income rider) without any other life in-

> surance to guarantee your family $200 per month for 18 years. This maximum coverage goes into effect with the payment of your first premium. The yearly premiums would be $92 if you are 25 years old, $120 if you are 30 years old, and $164 if you are 35 years old.

Taking into consideration your age, compare those premiums with the annual Social Security taxes which you would have to pay under present and future schedules already dictated by law.

Cost figures even more favorable to private insurance were contained in an editorial in the Dec. 24, 1955, issue of THE JOURNAL. It gave this information:

> A young physician aged 25, by paying an extra annual premium of approximately $65, can obtain a "family income" clause—at the time of purchase or later on if he is still insurable—in his $20,000 ordinary life insurance policy that would pay his family $200 a month during the interval between his death and the 20th anniversary of the issue of the policy, at which time the children would be 20 years older and the extra premium would cease. If the father died seven years after the issuance of the policy, the family would receive $200 a month under the "family income" clause for the next 13 years, when the $20,000 basic life insurance policy would be payable. Thus the face amount of the ordinary life insurance policy is not diminished by the payment of monthly benefits of $200 a month. If the father survived the 20-year period, the "family income" clause and its extra premium would terminate.

THE JOURNAL editorial pointed out that a physician can obtain the same family income protection for about $85 a year at age 30, about $115 a year at age 35, and about $166 a year at age 40. However, because very few fathers are over 40 when the last child is born, a more realistic counterpart to the OASI survivorship benefits might be a 10-year family income clause for physicians who already have reached the age group 40-45. The extra annual premium for a 10-year plan would be approximately $60 at age 40 and about $83 at age 45.

Another set of figures, obtained from an outstanding Chicago insurance organization, gives the following costs for term insurance that would provide family income of $200 per month from the time of the father's death until the 20th anniversary of the policy: $100 at age 30, $136 at age 35, $192 at age 40, and $279 at age 45. These would be the extra annual premiums for a rider attached to a $20,000 life insurance policy. Still another source, the Institute of Life Insurance, is authority for this statement: "The typical cost of a family income rider, providing $200 a month for 20 years and attached to a $20,000 straight life policy purchased at age 30, would be $105 a year. While the insurance provided by the rider is decreasing term, the charge is normally figured on a level premium basis."

Some insurance companies will add a $200 per month family income clause to a $10,000 life insurance policy. Family income plans can be purchased for a specified term of years—10, 15, or 20 years, depending on what best fits each family situation—and the premium terminates when the term of protection ends. At least one nationally known life insurance company has a special plan designed exclusively for physicians, taking into account both the family protection interests of the young doctor and the retirement aspects for the established physician.

Many variations are available in private insurance. The physician can "shop around" and obtain family protection tailored to his family's needs, geared to his economic pattern of life, and guaranteed by contract. The vast majority of physicians with young children—if they are thinking primarily in terms of family protection—can do much better under private insurance than by paying Social Security taxes for the main purpose of getting survivorship coverage. The younger the physician is at the time of purchasing family income protection, the greater is his advantage under private insurance.

The Social Security tax already is considerably higher than the extra annual premium which younger physicians would pay for good family protection added to a basic life insurance program. Furthermore, as pointed out earlier, that tax will increase in 1960, 1965, 1970, and 1975, at which time it will be $267.75. Can that tax, viewed as the cost of survivorship benefits, be considered a "bargain" in comparison with the lower annual premium which a physician would pay for a specified period of time—10, 15, or 20 years?

The wise physician, taking into consideration his own age and the ages of his wife and children, will make that comparison. In so doing, he also will bear in mind that if he is a young doctor he may be paying Social Security taxes for 30 years, 40 years, or possibly longer.

Most physicians, knowing the professional and economic pattern of a doctor's life, realize that they would get little or no return from Social Security in the form of retirement benefits. Some of them, however, have been misled by the argument that the survivorship benefits alone make Social Security a great bargain. Those who have been thinking along that line would be well advised to sit down with their insurance counselor or insurance agent for a detailed explanation of what they can do under private insurance. They will be pleasantly surprised.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
Edited Under the Direction of the Board of Trustees

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Cable Address . . . . "Medic, Chicago"

MEDICAL FOREIGN AID PROGRAMS

ONE OF the items of federal medical spending included in the A. M. A. Washington Letter last year was that of international health. The total figure was estimated to be around 50 million dollars annually, with two-thirds of these funds allocated to the International Cooperation Administration. It is this semiautonomous unit within the U. S. Department of State that administers the majority of our foreign medical programs. While 30 million dollars is a great deal of money, health programs use less than 2% of all foreign aid funds, which include both military and economic aid. The recent foreign aid discussions in Congress provide the opportunity for a nonpartisan review of that portion of our Mutual Security Program concerned with health.

Just 15 years ago, the United States and the country of Ecuador agreed on attempting a joint health program, emphasizing environmental sanitation. This was the beginning of technical cooperation in health, or the medical phase of Point 4, as it is commonly known. Since that time, international health programs have grown from the control of communicable disease to the construction and equipping of health facilities; and, of probably the greatest importance, the training and education of local personnel in a country to be able to carry on newly developed health programs by themselves.

The majority of ICA health projects are cooperative public health programs, designed to assist countries, at their request, to improve their health and living conditions. The relation of improved public health to economic advancement is coming to be better understood by leaders of every nation. Through the Point-4 program, American physicians, nurses, health educators, and other paramedical personnel assist participating countries to determine their health needs and then suggest specific approaches, based on practical experience, to achieve solutions of existing health problems. In many cases, our health workers relive experiences that were once as difficult to overcome in the United States as they are now in some other country, where such problems are being attacked for the first time.

In addition to contributing to economic progress, by promoting the prevention of mass diseases, international health activities are claimed to contribute to the achievement of the foreign policy objectives of the United States. Dr. Dwight H. Murray, past-president of the A. M. A., speaking at the first International Film Exhibition in New York last June, stressed the universal language of medicine, not only as a means of exchanging scientific knowledge and promoting medical progress but, more so, as an easily understood basis to explain the free and democratic way of life. There is probably no better way for the United States to demonstrate a friendly interest in other people and their problems than to promote community and self-help in eliminating sickness.

Among the 275 world health projects sponsored by the United States last year, there are many examples of accomplishments which, while directly benefiting the countries involved, indirectly act as barriers to diseases that could endanger the people in our own country. In Ethiopia, the establishment of a public health college, training approximately 70 health officers a year, has resulted in the development of several rural health centers in villages, centers which eventually will control many of the infectious diseases that, at present, are only hopefully detected through quarantine services. Cooperative services in Latin American countries, such as Mexico and Brazil, not only assist the people who live there but at the same time provide a healthier environment for Americans traveling through such areas, whether for business or pleasure.

A recent example of international health in action resulted in the development of a new influenza vaccine before a dangerous pandemic situation occurred. Influenza information centers spread throughout the world were able to report on the Asian influenza, determine that no present vaccine was effective for the particular strain, and provide the actual causative virus to prepare an effective vaccine only months after the disease became of potentially dangerous proportions.

The ultimate goal of a bilateral health program is to help a country become self-sustaining in health matters as soon as possible. In addition, it is no longer practical to rely chiefly on quarantine measures to safeguard the health of the people of the United States. The best way to attack a disease is at its source, and in many instances this is one of the main missions of medical foreign aid.

WELCOME TO PHILADELPHIA

For the first time, the annual Clinical Meeting of the American Medical Association will be held in Philadelphia, one of the largest, most historical, and yet most modern cities in this country. Every American certainly would like to visit Philadelphia at some time to see "the Cradle of Liberty"; the Liberty Bell; the Betsy Ross house, where the first American flag was made; the Edgar Allan Poe house, where "The Raven" and other classics were written; Valley Forge, where Washington and his Continental Army spent the memorable winter of 1777-1778; Carpenter's Hall, where the first Continental Congress met; Free Quakers' Meeting House, where Benjamin Franklin and his wife are buried; the great U. S. naval base, where many of the nation's warships have been built and a large part of the "mothball fleet" is now docked; and the U. S. Mint, where in a recent three-month period 90 million pennies were turned out, and where are designed and made on the order of the Congress medals honoring persons for contributions to this country's welfare and progress, a recent one being the Jonas Salk medal honoring the discoverer of the Salk poliomyelitis vaccine, which medal contained $700 worth of gold.

Philadelphia, in large part, lies between the Delaware and the Schuylkill rivers. Beyond the Delaware is Camden, N. J.; beyond the Schuylkill is West Philadelphia and that part of the city called the "Main Line," where the large estates of wealthy residents are located. In other parts of the city are quaint old colonial residences on narrow streets, some more than 200 years old. In the heart of Philadelphia is a great concentration of reminders of the American Revolution and the establishment of the United States as a free nation.

The Modern City

To rescue the irreplaceable shrines in old Philadelphia, civic leaders sought the help of the city, state, and federal government to develop the Independence Mall and the Independence National Historical Park, which, when completed, will cost many millions of dollars. The Mall, which will extend north from Independence Square, involves the demolition of all nonhistorical buildings for three blocks and the making of a formal approach to Independence Hall. The other project embraces four city blocks, in which many old buildings have been cleared away, while nearby will remain the site of Franklin's home, Carpenters Hall, and the City Tavern, where delegates to the first Continental Congress gathered. Other buildings will be restored, notably the Assembly Room of Independence Hall. To restore these buildings as they once were, historians have gathered the necessary information from more than 2 million manuscripts and other records. Landmarks of the whole revolutionary era in Philadelphia are being restored just as they were when Washington, Franklin, Hancock, and other Americans fought for freedom.

Huge Industrial Plants

Philadelphia is more than a city of historic traditions. It has miles of huge industrial plants, acres of steel mills, oil refineries, pharmaceutical laboratories, and hundreds of other types of industrial enterprises. It is said to be the largest fresh-water port in the world, "having recently passed New York City in total tonnage." There are new super highways, a multi-million-dollar airport, three major railroads, and an excellent city transportation system.

Educational Institutions

Here are such fine institutions as the University of Pennsylvania, Temple University, Drexel Institute of Technology, and Chestnut Hill, LaSalle, and St. Joseph's colleges. Besides the medical schools at Pennsylvania and Temple universities, there are Jefferson Medical College, Woman's Medical College of Pennsylvania, and Hahnemann Medical College. Nearby are Bryn Mawr, Swarthmore, Rosemont, and Haverford colleges, Villanova University, and other institutions of higher learning. The first medical school in North America was established at the University of Pennsylvania in 1765, and from it have graduated 21 physicians who later became President of the American Medical Association.

Other Interesting Places

Philadelphia is comparatively free of the frantic hustle of some other large cities. It is a great city by any standard and yet it goes all out for cultural living. The Philadelphia Symphony Orchestra is one of the finest, and the Robin Hood Dell outdoor concerts attract the best in the entertainment world. The National Philatelic Museum at Broad and Diamond features the stamps of different countries each month; the Atwater Kent Museum at 15 S. Seventh St. has popular "folk" exhibits that trace the growth of Philadelphia; at the University Museum, 33rd and Spruce, the history of man is illustrated in the relics of ancient civilizations; the Aquarium on the Schuylkill River, below the Art Museum, features nearly 4,000 live specimens of sea life; and there are the American-Swedish Historical Museum at 1900 Patterson Ave. and Elferth's Alley, one of the oldest streets in this country, having houses that date back to 1690.

Philadelphia Highlights

The Liberty Bell in Independence Hall.

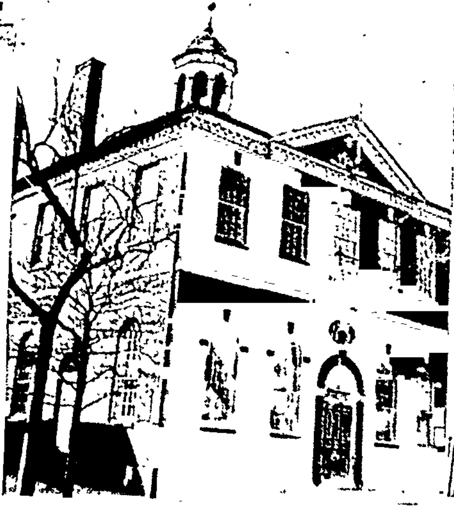
Below, Valley Forge Memorial Chapel.

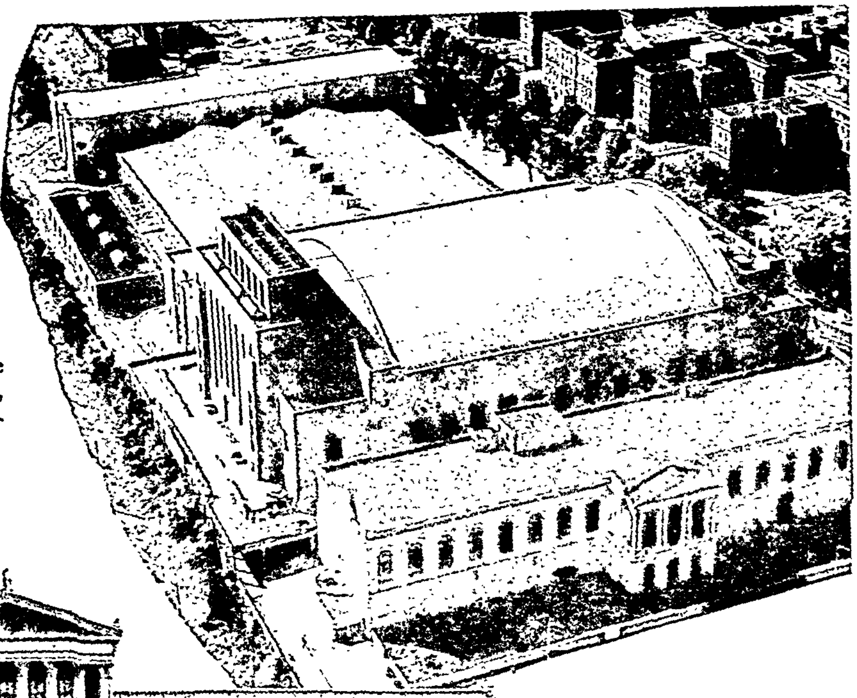
A part of the Valley Forge Battlefield.

Above, Independence Hall, where the U.S. Constitution and the Declaration of Independence were signed.

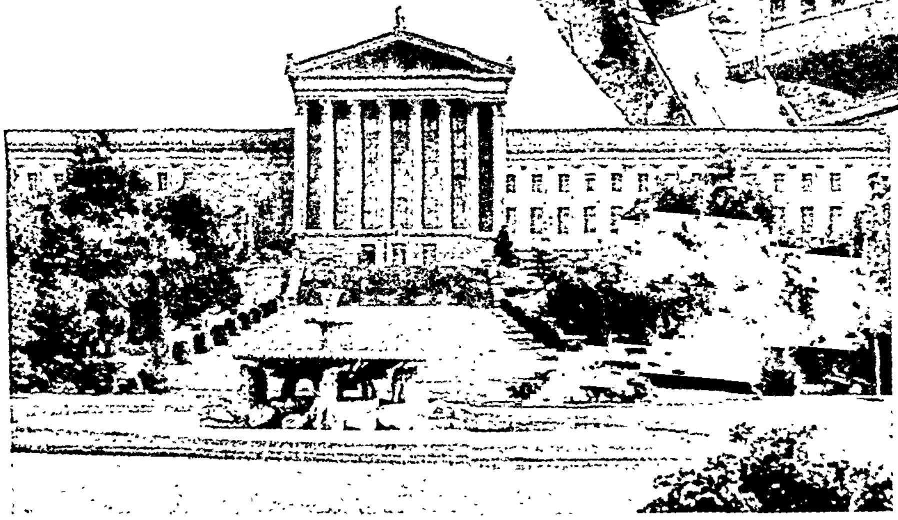
Right, Congress Hall.

Far right, Betsy Ross House, where the first American flag was made.





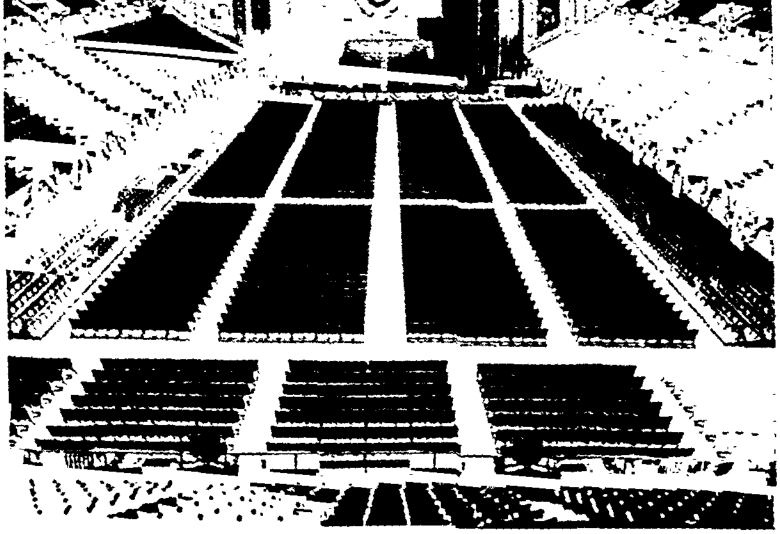
Aerial view of Convention Hall, at Curie Avenue and 34th Street, where exhibits, general scientific meetings, motion pictures, and registration will be held.

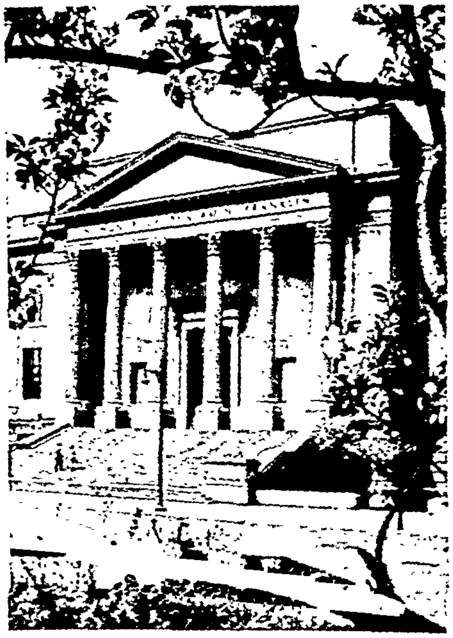


Art Museum, at the west end of the Parkway.

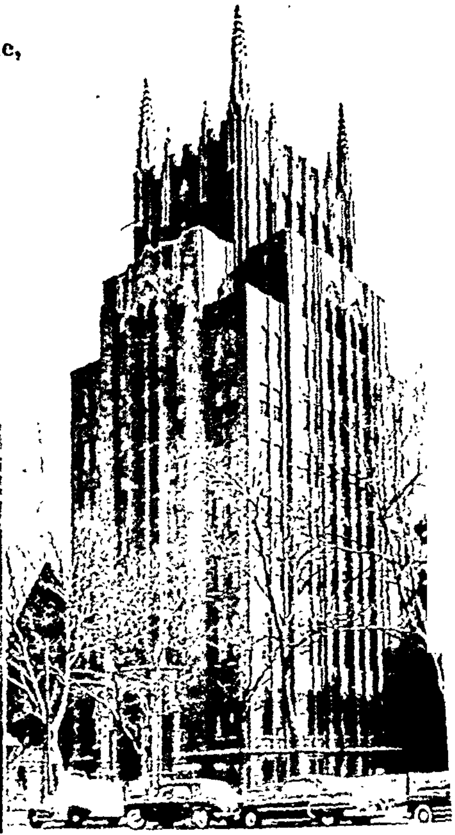
Right, Franklin Institute, at 20th Street and the Parkway.

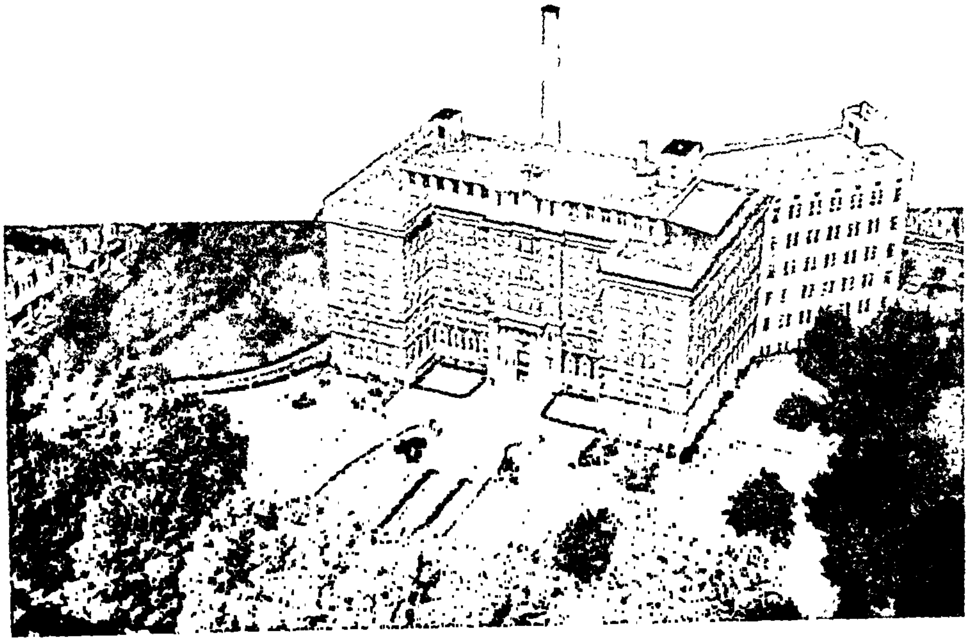
Below, Interior of Convention Hall.





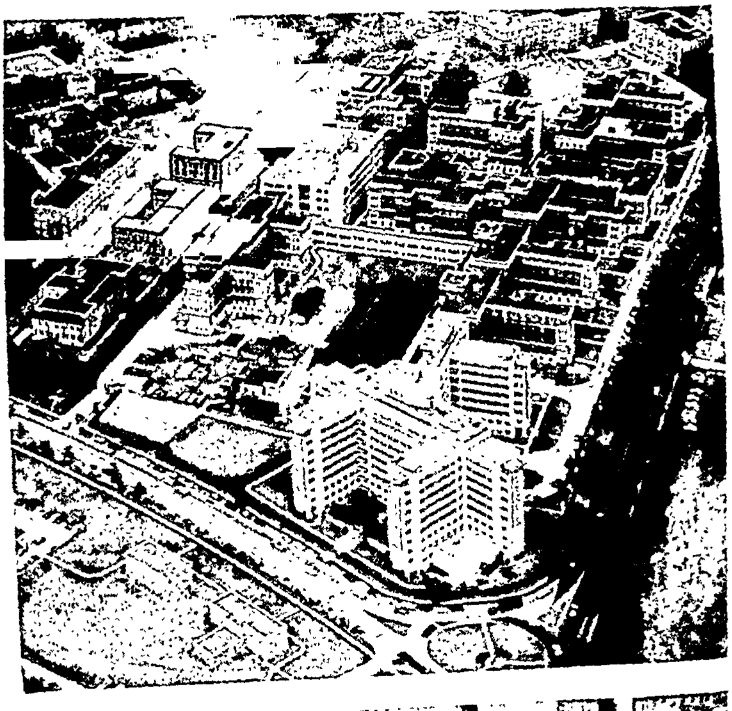
Right, Tower Building of Episcopal Hospital at Front Street and Lehigh Avenue, erected in 1933 on the site of the historic Leamy Mansion.





Misericordia Hospital, at 54th Street and Cedar Avenue.

Right, Aerial view of the Philadelphia General Hospital, Blockley Division.



Above, Temple University School of Medicine, at Broad and Ontario Streets.

Right, Pennsylvania Hospital, at Eighth and Spruce Streets.

THE CLINICAL MEETING

AMERICAN MEDICAL ASSOCIATION

Philadelphia, Dec. 3-6, 1957

OFFICIAL CALL

TO THE OFFICERS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The Clinical Meeting of the American Medical Association will be held in Philadelphia, Dec. 3-6, 1957.

House of Delegates: The House of Delegates will convene at 10 a. m. Tuesday, Dec. 3, in the Ballroom of the Bellevue-Stratford Hotel. In the House the representation of the various constituent associations for the 1957 Clinical Meeting is as follows:

Alabama	2
Alaska	1
Arizona	1
Arkansas	2
California	15
Colorado	2
Connecticut	3
Delaware	1
District of Columbia	2
Florida	3
Georgia	3
Hawaii	1
Idaho	1
Illinois	10
Indiana	4
Iowa	3
Isthmian Canal Zone	1
Kansas	2
Kentucky	2
Louisiana	2
Maine	1
Maryland	2
Massachusetts	6
Michigan	6
Minnesota	4
Mississippi	2
Missouri	4
Montana	1
Nebraska	2
Nevada	1
New Hampshire	1
New Jersey	6
New Mexico	1
New York	18
North Carolina	3
North Dakota	1
Ohio	8
Oklahoma	2
Oregon	2
Pennsylvania	11
Puerto Rico	1
Rhode Island	1
South Carolina	2
South Dakota	1
Tennessee	3
Texas	7
Utah	1
Vermont	1
Virginia	3
Washington	3
West Virginia	2
Wisconsin	4
Wyoming	1

The scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy, the Medical Corps of the Air Force, the Public Health Service, and the Veterans Administration are entitled to one delegate each.

Meetings and Exhibits: The scientific meetings and the scientific and technical exhibits will be held in the Philadelphia Convention Hall.

The Opening General Assembly will begin at 9:30 a. m., Tuesday, Dec. 3, in Room 1 at the Philadelphia Convention Hall.

The Scientific Program will open Tuesday, Dec. 3, at 10:30 a. m., and will continue throughout the afternoon of that day. The program will continue on Wednesday and Thursday, Dec. 4 and 5, and on Friday morning, Dec. 6, closing at 12 noon.

Registration: The Registration Bureau, which will be located in the Center Exhibition Hall of the Philadelphia Convention Hall, will be open as follows:

Tuesday, Dec. 3—8 a. m. - 5:30 p. m.
Wednesday, Dec. 4—8:30 a. m. - 5:30 p. m.
Thursday, Dec. 5—8:30 a. m. - 5:30 p. m.
Friday, Dec. 6—8:30 a. m. - 12 noon

David B. Allman, President.
E. Vincent Askey, Speaker, House of Delegates.
George F. Lull, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Roster of the Legislative Body of the American Medical Association

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Joseph C. Griffith, Milwaukee
William D. Stovall, Madison
Dexter H. Witte, Milwaukee

Wyoming
Albert T. Sudman, Green River

DELEGATES FROM THE SECTIONS AND GOVERNMENT SERVICES

Anesthesiology
Edward B. Tuohy, Los Angeles

Dermatology
Winfred A. Showman, Tulsa, Okla.

Diseases of the Chest
Hollis E. Johnson, Nashville, Tenn.

Experimental Medicine and Therapeutics
Edgar V. Allen, Rochester, Minn.

Gastroenterology and Proctology
Stuart T. Ross, Garden City, N. Y.

General Practice
Lester D. Bibler, Indianapolis

Internal Medicine
Charles T. Stone Sr., Galveston, Texas

Laryngology, Otology and Rhinology
Gordon F. Harkness, Davenport, Iowa

Military Medicine
Charles L. Leedham, Cleveland

Nervous and Mental Diseases
Francis M. Forster, Washington, D. C.

Obstetrics and Gynecology
Ralph E. Campbell, Madison, Wis.

Ophthalmology
Ralph O. Rychener, Memphis, Tenn.

Orthopedic Surgery
H. Relton McCarroll, St. Louis

Pathology and Physiology
Lall G. Montgomery, Muncie, Ind.

Pediatrics
Woodruff L. Crawford, Rockford

Physical Medicine
Walter Zeiter, Cleveland

Preventive Medicine
R. T. Johnstone, Los Angeles

Radiology
Eugene P. Pendergrass, Philadelphia

Surgery, General and Abdominal
Grover C. Penberthy, Detroit

Urology
Jay J. Crane, Los Angeles

United States Air Force
Dan C. Ogle

United States Army
James P. Cooney

United States Navy
Bruce E. Bradley

Public Health Service
Leroy E. Burney

Veterans Administration
Roy A. Wolford

There will be present also two student delegates from the Student American Medical Association.

REFERENCE COMMITTEES OF THE HOUSE OF DELEGATES

The Speaker of the House of Delegates, Dr. E. Vincent Askey, California, has appointed the following delegates to serve on the reference committees of the House at the Philadelphia meeting:

Amendments to the Constitution and Bylaws
Leopold H. Fraser, *Chairman*, California
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George S. Klump, Pennsylvania
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Stanley Weld, Connecticut
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Milford O. Rouse, Texas
R. T. Johnstone, Section on Preventive Medicine
Thurman B. Givan, New York

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Paul A. Davis, Ohio
Dan C. Ogle, United States Air Force
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M. Shelby Jared, Washington

Medical Education and Hospitals
Jay J. Crane, *Chairman*, Section on Urology
Willard A. Wright, North Dakota
Grover C. Penberthy, Section on Surgery, General and Abdominal
Philip S. Foisie, Massachusetts
Francis C. Coleman, Iowa

Medical Military Affairs
Francis T. Holland, *Chairman*, Florida
H. Thomas McGuire, Delaware
H. Kenneth Scatliff, Illinois
John S. DeTar, Michigan
Donovan F. Ward, Iowa

Miscellaneous Business

Willis H. Huron, *Chairman*, Michigan
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George F. Gsell, Kansas
Carl A. Lincke, Ohio

Reports of Officers

Durward G. Hall, *Chairman*, Missouri
Charles S. Smeltzer, Tennessee
Rufus Brittain, Virginia
Jesse W. Read, Washington
Elmer P. Weigel, New Jersey

Rules and Order of Business

John N. Gallivan, *Chairman*, Connecticut
Walter C. Bornemeier, Illinois
Clark Bailey, Kentucky
James Q. Graves, Louisiana
J. Arnold Bargen, Minnesota

Sections and Section Work

James H. Wooten Jr., *Chairman*, Texas
Charles L. Leedham, Section on Military Medicine
Ralph E. Campbell, Section on Obstetrics and Gynecology
Wilkie D. Hoover, Oklahoma
Norman S. Moore, New York

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Edward E. H. Munro, *Chairman*, Colorado
H. Linton January, New Mexico
Albert T. Sudman, Wyoming
Milo H. Fritz, Alaska
James E. Feldmayer, California

Sergeants at Arms

C. Paul White, *Master Sergeant*, Illinois
F. Sánchez-Castaño, Puerto Rico
E. A. Allen, Georgia

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Board of Trustees—E. S. Hamilton, Chairman, Kankakee, Ill., 1958; R. M. McKeown, Coos Bay, Ore., 1958; H. H. Hussey, Washington, D. C., 1959; F. J. L. Blasingame, Wharton, Texas, 1959; L. W. Larson, Bismarck, N. D., 1960; J. Z. Appel, Lancaster, Pa., 1960; J. P. Price, Florence, S. C., 1961; G. M. Fister, Ogden, Utah, 1962; C. A. Nafe, Indianapolis, Ind., 1962; the President; the President-elect; and, ex officio, the Vice President, Treasurer, Speaker and Vice Speaker of the House of Delegates.

STANDING COMMITTEES OF THE HOUSE OF DELEGATES

Judicial Council—G. A. Woodhouse, Pleasant Hill, Ohio, 1958; J. M. Hutcheson, Richmond, Va., 1959; L. A. Buie, Rochester, Minn., 1960; R. Ward, San Francisco, 1961; H. L. Pearson Jr., Chairman, Miami, Fla., 1962; G. F. Lull, Secretary, Chicago.

Council on Medical Education and Hospitals—V. Johnson, Rochester, Minn., 1958; L. S. McKittrick, Chairman, Brookline, Mass., 1958; C. T. Stone Sr., Galveston, Texas, 1959; W. A. Bunten, Cheyenne, Wyo., 1959; J. M. Faulkner, Cambridge, Mass., 1960; H. English, Danville, Ill., 1960; G. A. Caldwell, New Orleans, 1961; J. W. Cline, San Francisco, 1961; W. C. Wescoe, Kansas City, Kan., 1962; W. B. Allan, Baltimore, 1962; E. L. Turner, Secretary, Chicago.

Council on Medical Service—R. B. Chrisman Jr., Coral Gables, Fla., 1958; J. F. Burton, Oklahoma City, 1958; J. D. McCarthy, Chairman, Omaha, 1959; J. Lafe Ludwig, Los Angeles, 1959; H. B. Mulholland, Charlottesville, Va., 1960; H. B. Woolley, Idaho Falls, Idaho, 1960; C. E. Wertz, Buffalo, 1961; T. J. Danaher, Torrington, Conn., 1961; R. L. Novy, Detroit, 1962; D. H. Murray, Napa, Calif.; Mr. George W. Cooley, Acting Secretary, Chicago.

Council on Constitution and Bylaws—S. H. Osborn, Hartford, Conn., 1958; F. S. Winslow, Rochester, N. Y., 1959; B. E. Pickett Sr., Chairman, Carrizo Springs, Texas, 1960; Walter E. Vest, Huntington, W. Va., 1961; W. W. Furey, Chicago, 1962; J. Z. Appel, Lancaster, Pa.; the President, and the Speaker and Vice Speaker of the House of Delegates.

STANDING COMMITTEES OF THE BOARD OF TRUSTEES

Council on Drugs—T. Sollmann, Chairman, Cleveland, 1957; J. P. Leake, Washington, D. C., 1957; A. C. Curtis, Ann Arbor, Mich., 1957; W. C. Cutting, San Francisco, 1958; O. O. Meyer, Madison, Wis., 1958; M. H. Seevers, Ann Arbor, Mich., 1958; T. M. Brown, Washington, D. C., 1958; J. Stokes Jr., Philadelphia, 1959; P. H. Long, Brooklyn, 1959; W. G. Workman, Bethesda, Md., 1959; F. A. Simeone, Cleveland, 1959; C. A. Dragstedt, Chicago, 1960; I. Starr, Philadelphia, 1960; J. M. Hayman, Boston, 1960; E. M. K. Geiling, Chicago, 1961; E. M. Nelson, Washington, D. C., 1961; H. K. Beecher, Boston, 1961; H. D. Kautz, Secretary, Chicago.

Council on Scientific Assembly—S. P. Newman, Denver, 1957; J. R. McVay, Kansas City, Mo., 1957; H. R. Viets, Brookline, Mass., 1958; J. A. Bargen, Rochester, Minn., 1958; S. P. Reimann, Philadelphia, 1959; A. McMahon, Chairman, St. Louis, 1959; L. W. Larson, Bismarck, N. D., 1960; C. A. Lincke, Carrollton, Ohio, 1960; M. E. DeBakey, Houston, Texas, 1961; T. G. Hull, Secretary, Chicago.

Council on Medical Physics—H. H. Reese, Madison, Wis., 1957; D. Vail, Chicago, 1957; S. Warren, Boston, 1957; R. Chamberlain, Philadelphia, 1958; O. Glasser, Cleveland, 1958; A. C. Cipollaro, New York, 1958; F. C. Bost, San Francisco, 1959; F. H. Krusen, Chairman, Rochester, Minn., 1959; M. R. Mobley, Florence, S. C., 1959; *A. Blalock, Baltimore, 1960; G. J. Thomas, Pittsburgh, 1960; G. E. Wakerlin, Chicago, 1961; *W. B. Allan, Baltimore, 1961; R. E. DeForest, Secretary, Chicago.

Council on Foods and Nutrition—W. H. Griffith, Los Angeles, 1957; W. J. Darby, Nashville, Tenn., 1958; C. A. Elvehjem, Madison, Wis., 1958; J. B. Youmans, Nashville, Tenn., 1958; L. A. Maynard, Ithaca, N. Y., 1959; G. A. Goldsmith, New Orleans, 1959; C. S. Davidson, Chairman, Boston, 1959; C. A. Smith, Boston, 1960; D. B. Hand, Geneva, N. Y., 1960; R. Jackson, Columbia, Mo., 1961; G. R. Cowgill, Hamden, Conn., 1961; P. L. White, Secretary, Chicago.

Council on Industrial Health—P. S. Richards, Salt Lake City, 1957; J. H. Sterner, Rochester, N. Y., 1957; R. T. Johnstone, Los Angeles, 1958; L. C. McGee, Wilmington, Del., 1958; C. F. Shook, Toledo, Ohio, 1958; J. N. Gallivan, East Hartford, Conn., 1959; V. C. Baird, Houston, Texas, 1959; O. A. Sander, Milwaukee, 1959; R. A. Kehoe, Cincinnati, 1960; E. S. Jones, Hammond, Ind., 1960; W. P. Shepard, Chairman, New York, 1961; M. N. Newquist, New York, 1961; B. D. Holland, Secretary, Chicago.

Council on National Defense—R. A. Benson, Bremerton, Wash., 1957; P. H. Long, Brooklyn, 1957; R. L. Sensenich, South Bend, Ind., 1958; H. C. Lueth, Evanston, Ill., 1958; H. S. Diehl, Chairman, Minneapolis, 1959; R. L. Meiling, Columbus, Ohio, 1959; C. P. Hungate, Kansas City, Mo., 1960; W. B. Martin, Norfolk, Va., 1960; David H. Poer, Atlanta, Ga., 1961; H. B. Wright, Cleveland, 1961; Mr. F. W. Barton, Secretary, Chicago.

Council on Rural Health—W. J. Weese, Ontario, Ore., 1957; W. A. Wright, Williston, N. D., 1957; F. S. Crockett, Chairman, Lafayette, Ind., 1958; W. W. Washburn, Boiling Springs, N. C., 1958; C. S. Mundy, Toledo, Ohio, 1959; C. R. Henry, Little Rock, Ark., 1959; F. A. Humphrey, Ft. Collins, Colo., 1960; N. H. Gardner, E. Hampton, Conn., 1960; A. T. Stewart, Lubbock, Texas, 1961; C. B. Andrews, Sonoma, Calif., 1961; Mrs. A. Hibbard, Secretary, Chicago.

Council on Mental Health—M. R. Kaufman, New York, 1957; L. H. Bartemeier, Chairman, Baltimore, 1958; W. H. Baer, Peoria, Ill., 1958; H. F. Ford, Galveston, 1958; L. H. Smith, Philadelphia, 1959; G. E. Gardner, Boston, 1959; F. M. Forster, Washington, D. C., 1960; H. T. Carmichael, Chicago, 1961; R. J. Plunkett, Secretary, Chicago.

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*Resigned.

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THE SCIENTIFIC PROGRAM

CONVENTION HALL

The Scientific Program for the Philadelphia Clinical Meeting is a full one, with most of the activities taking place on the ground floor of Convention Hall and its adjacent exhibition halls.

Lectures, panels, and symposiums will be carried on in three lecture rooms. Color television, originating at Lankenau Hospital, will be viewed at Convention Hall each morning and afternoon. Motion pictures will include outstanding medical films of the year, with the authors of many of the films being present for discussion. The Scientific Exhibit will be conducted continuously from Tuesday morning to Friday noon. A unique feature of the meeting will be the Trans-Atlantic Conference with the Royal Society of Medicine in London on Wednesday afternoon, Dec. 4. The convenient arrangement of all activities in close proximity, together with a restaurant in the building, will make it possible for physicians attending the meeting to take full advantage of all portions of the program.

The Council on Scientific Assembly extends its appreciation to the local committee on arrangements in Philadelphia for its excellent cooperation and its unstinted contribution of time and energy. Dr. Gilson Colby Engel, the General Chairman, together with Dr. Leandro M. Tocantins, Chairman of the Scientific Program Committee, and Dr. Lawrence Singmaster, Chairman of the Television Committee, have been exceedingly active over the past year in arranging details. Appreciation is likewise extended to Smith, Kline & French Laboratories, Philadelphia, for its part in the presentation of color television and the Trans-Atlantic Conference.

For the sake of convenience in making his selections, the visiting physician will find the printed program grouped by morning and afternoon periods for each day. The program begins Tuesday morning, Dec. 3, and will continue until 12 noon Friday, Dec. 6.

OPENING GENERAL ASSEMBLY: ROOM 1

Tuesday morning, Dec. 3

Presiding: Gilson Colby Engel, Philadelphia, General Chairman

9:30 **Speakers:**
- Samuel B. Hadden, Philadelphia, President, Philadelphia County Medical Society.
- John W. Shirer, Pittsburgh, President, Medical Society of the State of Pennsylvania.
- James P. Dixon Jr., Philadelphia, Commissioner of Public Health, City of Philadelphia.
- Alphonse McMahon, St. Louis, Chairman, Council on Scientific Assembly, American Medical Association.
- David B. Allman, Atlantic City, N. J., President, American Medical Association.

PANEL DISCUSSION: ROOM 1

Tuesday morning, Dec. 3

Chairman: Edward L. Bortz, Philadelphia.

10:30-11:45 **Panel Discussion on Oral Hypoglycemic Agents in the Treatment of Diabetes.**
Garfield G. Duncan, Philadelphia, Moderator.
Participants: Francis D. W. Lukens, Philadelphia, Thomas H. McGavack, New York, and I. Arthur Mirsky, Pittsburgh.

LECTURES: ROOM 2

Tuesday morning, Dec. 3

Chairman: O. Spurgeon English, Philadelphia.

10:30-10:50 **The Tranquilizing Drugs: What Can and What Cannot Be Expected from Them.**
Van Buren O. Hammett, Philadelphia.

11:00-11:20 **The Depressions of Middle Life**
Joseph F. Hughes, Philadelphia

11:30-12:00 **Emotional Problems of Growing Older.**
Baldwin L. Keyes, Philadelphia.

PANEL DISCUSSION: ROOM 3

Tuesday morning, Dec. 3

Chairman: W. Emory Burnett, Philadelphia.

10:30-11:45 **Panel Discussion on Surgery in Acquired Valvular Disease.**
Robert D. Dripps Jr., Philadelphia, Moderator.
Participants: William L. Glenn, New Haven, Conn.; Harry F. Zinsser, Philadelphia; Charles P. Bailey, Philadelphia; and John Y. Templeton III, Philadelphia.

MOTION PICTURES: ROOM 5

Tuesday morning, Dec. 3

10:30 **Disorders of the Heartbeat.**
American Heart Association, New York.

10:57 **Bedside Management of Fluid Balance Problems.**
Belding H. Scribner, Seattle, and Carl R. Hines, Chicago.

11:22 **The Hepato Jugular Reflux: A Helpful Sign in Diagnosis and Treatment of Congestive Heart Failure.**
J. Marion Bryant, New York.

11:37 Hypothyroidism: Its Pathognomonic Diagnosis and Treatment.
Paul M. Starr, Los Angeles.

PANEL DISCUSSIONS: ROOM 1

Tuesday afternoon, Dec. 3

Chairman: Frederick A. Bothe, Philadelphia.

1:30-2:45 Panel Discussion on the Treatment of Arthritis.
John Lansbury, Philadelphia, Moderator.
Participants: Joseph L. Hollander and Richard T. Smith, Philadelphia; Alexander B. Gutman, New York; and David S. Howell, Miami, Fla.

3:00-4:15 Panel Discussion on Massive Upper Gastrointestinal Bleeding.
Henry L. Bockus, Philadelphia, Moderator.
Participants: Arthur Finkelstein, C. Wilmer Wirts Jr., and Jonathan E. Rhoads, Philadelphia.

LECTURES AND SYMPOSIUM: ROOM 2

Tuesday afternoon, Dec. 3

Co-chairman: Bernard J. Alpers and
Kenneth E. Appel, Philadelphia.

1:00-1:20 Cerebral Vascular Insufficiency.
Derek Ernest Denny-Brown, Boston.

1:30-1:50 The Management of Diabetic Neuritis.
Charles R. Shuman, Philadelphia.

2:00-2:20 Vertigo: Clinical Differentiation and Treatment.
Gabriel A. Schwarz, Philadelphia.

2:30-2:50 The Management of Epilepsy.
Charles Rupp Jr., Philadelphia.

3:00-3:20 Anxiety States of Early Adult Life.
Paul J. Poinsard, Philadelphia.

3:30-5:00 *Symposium on Juvenile Delinquency*
Aiding the Parent with the Stubborn and Rebellious Adolescent.
Vincent J. Lathbury Jr., Philadelphia.
Psychiatric Aspects of Juvenile Delinquency.
Adelaide McF. Johnson, Rochester, Minn.
Legal Aspects of Juvenile Delinquency.
Judge Nochem S. Winnett, Philadelphia.
Pediatric Aspects of Juvenile Delinquency.
Sherman Little, Buffalo.

PANEL DISCUSSIONS: ROOM 3

Tuesday afternoon, Dec. 3

Chairman: Herbert R. Hawthorne, Philadelphia.

1:30-2:45 Panel Discussion on Carcinoma of the Lung.
John H. Gibbon Jr., Philadelphia, Moderator.
Participants: F. Johnson Putney, Julian Johnson, Paul Jernstrom, and J. Woodrow Savacool, Philadelphia.

3:00-4:15 Panel Discussion on Progress in the Treatment of Carcinoma of the Cervix.
Robert A. Kimbrough Jr., Philadelphia, Moderator.
Participants: John B. Montgomery, Antolin Raventos, George A. Hahn, and A. Reynolds Crane, Philadelphia.

COLOR TELEVISION: ROOM 4

Tuesday afternoon, Dec. 3

2:00-4:00 Panel Discussion on Modern Concepts of Hypertension and Its Treatment.
Joseph H. Hafkenschiel Jr., Lankenau Hospital, Philadelphia, Moderator.
Participants: Charles C. Wolferth and John K. Clark, Hospital of the University of Pennsylvania; William Likoff, Hahnemann Medical College and Hospital; and Edward Weiss, Temple University Hospital, Philadelphia.

MOTION PICTURES: ROOM 5

Tuesday afternoon, Dec. 3

1:30 The Doctor Defendant.
American Medical Association, Chicago.

2:00 Surgical Correction of Female Sterility.
Carlos D. Guerrero, Mexico City.

2:36 Hormonal Cyto-diagnosis (Vaginal Smears).
Andre Sicard, Paris.

2:57 The Repair of Ventral Hernia.
Walter C. MacKenzie, Edmonton, Alberta, Canada.

3:23 Surgical Treatment of Direct Hernia.
Henry N. Harkins, Lester R. Sauvage, and Roy R. Vetto, Seattle.

3:53 Breech Delivery.
Bruce Mayes, Sydney, Australia.

4:11 The Lower Segment Cesarean Section.
Bruce Mayes, Sydney, Australia.

MOTION PICTURE: BALLROOM, SHERATON HOTEL

Tuesday evening, Dec. 3

8:30 M.D. International.
A premiere showing of the latest March of Medicine television program, an hour-long documentary in color, depicting the work that American physicians are doing in remote corners of the globe—Korea, Hong Kong, Burma, Sarawak, Nepal, India, Lebanon, and Ethiopia. Presented in cooperation with Smith, Kline & French Laboratories, Philadelphia.

SYMPOSIUM AND PANEL DISCUSSION: ROOM 1

Wednesday morning, Dec. 4

Co-chairmen: Hans May and Thomas M. Durant,
Philadelphia.

9:00-10:15 *Symposium on Traumatic Injuries*
Treatment of Shock.
Brooke Roberts, Philadelphia.
Care of Facial Injuries.
Henry F. Royster, Philadelphia.
Care of the Patient with Multiple Injuries.
William L. Martin, Philadelphia.

10:20-11:45 Panel Discussion on Plasma Lipids and Coronary Disease.
Charles F. Wilkinson Jr., New York, Moderator.
Participants: Samuel Gurin, Peter Kuo, Louis A. Soloff, and William D. Stroud, Philadelphia.

LECTURES: ROOM 2

Wednesday morning, Dec. 4

Chairman: HENRY J. TUMEN, Philadelphia.

9:00-9:20 **Precancerous Lesions of the Colon.**
WILLIAM T. FITTS JR., Philadelphia.

9:30-9:50 **Carcinoma of the Stomach Appearing After Previous Gastric Surgery for Benign Ulcer.**
DONALD BERKOWITZ and PAUL COONEY, Philadelphia.

10:00-10:20 **Dysphagia: Clinical Differentiation and Management.**
STANLEY H. LORBER, Philadelphia.

10:30-10:50 **Iron Therapy: Practical Considerations.**
STUART C. FINCH, New Haven, Conn.

11:00-11:20 **Practical Uses of Products of Blood and Plasma Fractionation.**
ROBERT T. CARROLL and LOUIS A. KAZAL, Philadelphia.

11:30-11:50 **Sarcoidosis: Diagnosis and Management.**
HAROLD L. ISRAEL and MAURICE SONES, Philadelphia.

LECTURES: ROOM 3

Wednesday morning, Dec. 4

Chairman: JOSEPH STOKES JR., Philadelphia.

9:00-9:20 **Vaccination Against Poliomyelitis; Its Present and Future Status.**
LEWIS L. CORIELL, Camden, N. J.

9:30-9:50 **Fluid Balance in Infants.**
HANS G. KEITEL, Philadelphia.

10:00-10:20 **The Why's of Enuresis.**
CALVIN F. SETTLAGE, Ardmore, Pa.

10:30-10:50 **The Prophylaxis of Rheumatic Fever.**
ELLA ROBERTS, Philadelphia.

11:00-11:20 **Penicillin Resistant Organisms in the Nursery and Operating Room.**
ROBERT I. WISE, Philadelphia.

11:30-11:50 **Hemolytic Disease of the Newborn.**
THOMAS R. BOGGS JR., Philadelphia.

COLOR TELEVISION: ROOM 4

Wednesday morning, Dec. 4

10:00-12:00 **Wet Clinic on Surgical Conditions of the Stomach and Duodenum.**
KENDALL A. ELSOM, Hospital of the University of Pennsylvania, Philadelphia, Moderator.
Participants: GILSON COLBY ENGEL, LAWRENCE SINGMASTER, and CLIFTON F. WEST JR., Lankenau Hospital, Philadelphia.

MOTION PICTURES: ROOM 5

Wednesday morning, Dec. 4

9:00 **Cholecystectomy and Operative Cholangiography.**
JOEL W. BAKER and JOHN H. WALKER, Seattle.

9:38 **Technique of Proctoscopy.**
RAYMOND J. JACKMAN and EDWARD R. MORGAN, Rochester, Minn.

9:55 **Hemorrhoids or Piles and the Early Detection of Rectal Cancer.**
A. LAWRENCE ABEL and H. GORDON UNGLEY, London.

10:19 **Vaginal Hysterectomy for Prolapse.**
FREDERICK J. HOFMEISTER, Milwaukee.

10:36 **Complete Cesarean Hysterectomy.**
M. EDWARD DAVIS, Chicago.

10:58 **Complete Vaginal Repair: A Simplified Approach.**
STANLEY ROGERS, JACK MOORE, and WARREN JACOBS, Houston, Texas.

11:19 **Time and Two Women: Early Diagnosis of Cancer of the Uterus with Special Emphasis on Cytology.**
JOSEPH V. MEIGS, Boston.

PANEL DISCUSSIONS: ROOM 1

Wednesday afternoon, Dec. 4

Chairman: HARRISON F. FLIPPIN, Philadelphia.

1:30-2:45 ***Panel Discussion on Problems in the Long-term Administration of Cortisone and Other Anti-inflammatory Agents.***
CARROLL S. WRIGHT, Philadelphia, Moderator.
Participants: MALCOLM W. MILLER, LEROY W. KRUMPERMAN, and FREDERICK B. WAGNER, Philadelphia; and CHARLES RAGAN JR., New York.

3:00-4:15 **Panel Discussion on Practical Aspects of Anticoagulant Therapy in Cardiovascular Disease.**
JOSEPH B. VANDER VEER, Philadelphia, Moderator.
Participants: HENRY I. RUSSEK, Staten Island, N. Y., and WILLIAM BLAKEMORE, ISADORE W. GINSBURG, and JOSEPH A. WAGNER, Philadelphia.

LECTURES: ROOM 2

Wednesday afternoon, Dec. 4

Co-chairman: EUGENE P. PENDERGRASS and PETER A. HERBUT, Philadelphia.

1:00-1:30 ***The Late Effects of Exposure to Irradiation.***
JAMES V. NEEL, Ann Arbor, Mich.

1:30-1:50 **The Diagnosis and Neurosurgical Treatment of Vascular Disorders of the Brain.**
RUDOLPH JAEGER, Philadelphia.

2:00-2:20 **Diseases of the Abdominal Aorta.**
DAVID W. KRAMER, Philadelphia.

2:30-2:50 **Realistic Approach to Occupational Hazards as a Cause of Disease.**
LEMUEL C. MCGEE, Wilmington, Del.

3:00-3:20 **Clinical Approach to Alcoholism.**
HAROLD W. LOVELL, New York.

3:30-3:50 **Observations on Mitral Heart Disease After Mitral Commissurotomy.**
DANIEL W. LEWIS, Philadelphia.

4:00-4:20 **The Increase in Chronic Pulmonary Disease in the Older Population.**
ROSS K. CHILDERHOSE, Harrisburg, Pa.

4:30-4:50 **The Solitary Pulmonary Nodule.**
J. WINTHROP PEABODY JR., Washington, D. C.

PANEL DISCUSSION: ROOM 3

Wednesday afternoon, Dec. 4

Chairman: LEWIS C. SCHEFFEY, Philadelphia.

1:30-2:45 **Panel Discussion on Emotional and Other Problems Associated with the Menopause.**
JOSEPH T. FREEMAN, Philadelphia, Moderator.
Participants: EDWARD WEISS, BRUCE V. MACFADYEN, ABRAHAM E. RAKOFF, and JAMES D. GARNET, Philadelphia.

COLOR TELEVISION: ROOM 4

Wednesday afternoon, Dec. 4

1:30-3:00 Panel Discussion on an Integrated Approach to the Patient with Functional Complaints.
EDWARD L. BORTZ, Lankenau Hospital, Philadelphia, Moderator.
Participants: BALDWIN L. KEYES, Jefferson Medical College Hospital; JOSEPH HUGHES, Hospital of the Woman's Medical College of Pennsylvania; and CHARLES M. THOMPSON, Hahnemann Medical College and Hospital, Philadelphia.

TRANS-ATLANTIC MEDICAL CONFERENCE: BALLROOM

Wednesday afternoon, Dec. 4

American Medical Association Clinical Meeting,
Philadelphia Royal Society of Medicine,
London, England

3:00-4:30 (Eastern Standard Time)
8:00-9:30 (Greenwich Time)

This program is presented with the cooperation of Smith, Kline & French Laboratories in honor of Thomas Hodgkin on the occasion of the 125th anniversary of the description of Hodgkin's disease.

Panel Discussion on Advances in Chemotherapy of Cancer with Special Reference to the Leukemias

American Medical Association Panel in Ballroom, Convention Hall, Philadelphia.

LEANDRO M. TOCANTINS, Professor of Clinical and Experimental Medicine, Jefferson Medical College of Philadelphia, Philadelphia, Moderator.

Participants: JOSEPH H. BURCHENAL, Cornell University Medical College, and Memorial Center for Cancer and Allied Diseases, New York; R. PHILIP CUSTER, University of Pennsylvania School of Medicine, and Presbyterian Hospital, Philadelphia; SIDNEY FARBER, Harvard Medical School, Boston; EMIL FREI, National Cancer Institute, Bethesda, Md.; and HOWARD SKIPPER, Southern Research Institute, Birmingham, Ala.

Royal Society of Medicine, Section on Surgery, London.

DICKSON WRIGHT, Chairman, Section on Surgery, Royal Society of Medicine, London, Moderator.
Participants:—SIR ALEXANDER HADDOW, FRANZ BERGEL, and RONALD BODLEY-SCOTT, London.

PANEL DISCUSSIONS: ROOM 1

Thursday morning, Dec. 5

Chairman: S. DANA WEEDER, Philadelphia.

9:00-10:15 Panel Discussion on the Treatment of Fractures Involving Joints.
ANTHONY F. DEPALMA, Philadelphia, Moderator.
Participants: JESSE T. NICHOLSON, PAUL C. COLONNA, ADOLPH A. WALKLING, and JOHN DOWLING, Philadelphia.

10:30-11:45 Panel Discussion on Detection and Management of Accidental Poisoning.
KATHARINE BOUCOT, Philadelphia, Moderator.
Participants:

Toxicologist.	FREDERICK RIEDERS, Philadelphia.
Psychiatrist.	PHILIP Q. ROCHE, Philadelphia.
Pediatrician.	FELIX E. KARPINSKI, Philadelphia.
Pathologist.	RUSSELL S. FISHER, Baltimore.

LECTURES: ROOM 2

Thursday morning, Dec. 5

Chairman: HARRY P. SCHENCK, Philadelphia.

9:00-9:20 The Treatment of Disease of the Peripheral Arteries.
HUGH MONTGOMERY, Philadelphia.

9:30-9:50 The Cardiac Patient as a Surgical Risk.
JAMES E. ECKENHOFF, Philadelphia.

10:00-10:20 Surgical Convalescence: When Does It End?
N. HENRY MOSS, C. W. SCHWEGMAN, and F. CURTIS DOHAN, Philadelphia.

10:30-10:50 Care of Soft Tissue Wounds. (Motion picture)
H. HASKELL ZIPERMAN, Fort Sam Houston, Texas.

11:00-11:20 Common Forms of Obstructive Uropathy and Their Management.
THEODORE R. FETTER, Philadelphia.

11:30-11:50 The Surgery of Paralysis Agitans.
H. HOUSTON MERRITT, New York.

LECTURES AND SYMPOSIUM: ROOM 3

Thursday morning, Dec. 5

Co-Chairman: MARTIN J. SOKOLOFF and
DONALD M. PILLSBURY, Philadelphia.

9:00-9:20 What Radioisotope Therapy Has to Offer.
JOSEPH P. CONCANNON and SIMON KRAMER, Philadelphia.

9:30-9:50 The Sequelae of Acute Hepatitis.
W. PAUL HAVENS, Philadelphia.

10:00-10:20 Multiple Screening Tests for Detecting Disease.
KENDALL A. ELSOM, Philadelphia.

10:30-12:00 *Symposium on Atopic Eczema*
Pediatric Aspects.
RICHARD W. OLMSTEAD, Philadelphia.
Allergic Aspects.
MERLE M. MILLER, Philadelphia.
Immunologic Aspects.
T. N. HARRIS, Philadelphia.
Dermatological Aspects.
CARROLL F. BURGOON, JR., Philadelphia.

COLOR TELEVISION: ROOM 4

Thursday morning, Dec. 5

10:00-12:00 Wet Clinic on Surgical Conditions of the Colon.
SAMUEL P. HARBISON, University of Pittsburgh Medical School, Pittsburgh, Moderator.
Participants: J. MONTGOMERY DEAVER, JOHN E. HOPKINS, and EDWIN W. SHEARBURN JR., Lankenau Hospital, Philadelphia.

MOTION PICTURES: ROOM 5

Thursday morning, Dec. 5

9:00 Anaphylaxis and Allergy.
PASTEUR VALLERY-RADOT and BERNARD N. HALPERN, Paris.

9:47 Structure and Function of the Middle Ear.
ICHIRO KIRIKAE, Tokyo.

10:12 The Physician and Emotional Disturbance.
AMERICAN MEDICAL ASSOCIATION, Chicago.

11:12 The Meti-Steroids in Rheumatoid Arthritis.
JOSEPH EIDELSBERG, New York; ABRAHAM KOLODIN, Montclair, N. J.; and EVELYN MERRICK, Orange, N. J.

11:36 Principles of Artificial Respiration.
JAMES C. WHITTENBERGER, BENJAMIN G. FERRIS JR. and JERE MEAD, Boston.

Thursday afternoon, Dec. 5

Presiding: Nicholas Padis, Philadelphia.

2:00 **The Cultural Environment Surrounding the Origin of the American Medical Association.**
Benjamin Spector, Boston.

2:30 **Philadelphia's Contribution to Pediatrics.**
Samuel Radbill, Philadelphia.

TOURS TO HISTORIC PHILADELPHIA

Friday afternoon, Dec. 6

2:00 **Start at the Bellevue-Stratford Hotel.**

On Friday afternoon, Dec. 6, tours will be conducted to places of historic interest. Transportation will be arranged for those who are interested, leaving the Bellevue-Stratford Hotel at 2:00 p. m., with visits to the following places:

1. **College of Physicians.**
2. **Pennsylvania Hospital.**
3. **Philadelphia General Hospital (Osler Museum).**
4. **University of Pennsylvania Hospital and Medical School.**
5. **Lankenau Hospital.**

Arrangements must be made in advance, either at the History of Medicine booth in the Scientific Exhibit during the meeting, or by communicating with the Chairman of the Subcommittee on Tours, Dr. Herbert J. Dietrich Jr., 2035 Delancey Pl., Philadelphia 3.

SPECIAL EXHIBIT ON FRACTURES

Spaces 301-302
401-402

The Special Exhibit on Fractures is presented under the auspices of the following committee:

Ralph G. Carothers, Cincinnati, chairman.
Harry B. Hall, Minneapolis.
Charles V. Heck, Chicago.

Continuous demonstrations will be conducted daily from 10 a. m. to 12 noon and *from 2 to 4 p. m. from Tuesday morning to Friday noon* on the following subjects:

Fractures Resulting from a Fall on the Outstretched Hand.
Fractures of the Ankle.
Fracture of the Lower End of the Radius.

Basic principles will be stressed, with particular emphasis on the interest of the physician in general practice. Ample opportunity will be allowed for questions, and members of the committee will be present to discuss individual problems with visiting physicians.

A pamphlet giving the essential features of the exhibit has been prepared for distribution.

The following surgeons will assist the committee in the *presentation of the exhibit:*

Charles DeBold Jr., Poughkeepsie, N. Y.
Roy E. Brackin, Winnetka, Ill.
F. Paul Duffy, Cincinnati.
William McDaniel Ewing, Louisville, Ky.
Herbert C. Fett Jr., Brooklyn, N. Y.
Morris E. Goldman, Hollywood, Fla.
Harold T. Hansen, South Orange, N. J.
Earl Harter, Pittsburgh.
Kenneth T. Hubbard, Maywood, Ill.
William J. Kisiel, Springfield, Mass.
William T. Kriete Jr., New York.
Walter D. Ludlum Jr., New York.
Sydney N. Lyttle, Flint, Mich.
Andrew R. Mailer, Poplar Grove, Mo.
E. M. Neptune, Syracuse, N. Y.
Theodore Norley, West Palm Beach, Fla.
Edmund T. Rumble Jr., Callicoon, N. Y.
John C. Schmerge, Cincinnati.
S. Ralph Terhune, Birmingham, Ala.
Franklin V. Wade, Flint, Mich.
Kenneth R. Weston, Allentown, Pa.

PROBLEMS OF DELIVERY—MANIKIN DEMONSTRATIONS

Space 332

Manikin demonstrations on problems of delivery will be conducted at stated intervals throughout the week by outstanding obstetricians. An opportunity for questions and answers will be given after each demonstration.

Thaddeus L. Montgomery, Philadelphia, is in charge of the demonstrations. The following schedule will be presented:

Tuesday, Dec. 3

12:30 p. m. *Normal Vertex Delivery in Lithotomy and Lateral Positions.*
Paul A. Bowers, Philadelphia.

4.30 p. m. **Vertex Delivery with Local and Pudendal Block.**
John P. Emich Jr., Philadelphia.

Wednesday, Dec. 4

10:00 a. m. **Persistent Occiput Posterior.**
Elsie R. Carrington, Philadelphia.

12:30 p. m. **Breech Presentation.**
Joseph L. Finn, Jenkintown, Pa.

Thursday, Dec. 5

10:00 a. m. **Outlet Dystocia and Forceps Delivery.**
Newlin F. Paxson, Philadelphia.

12:30 p. m. **Brow, Shoulder, Compound Presentation.**
Harry Fields, Philadelphia.

Friday, Dec. 6

10:00 a. m. **Version, External and Internal.**
James R. Herron, Camden, N. J.

PSYCHOLOGY AND NEUROLOGY

Space 103

Behavioral Effects of Meprobamate on Normal Subjects.
James Miller, University of Michigan Medical School, Ann Arbor, Mich.

Space 104

Control of Seizures and Hypertonus: Meprobamate in Tetanus, Epilepsy and Cerebral Palsy: An Evaluation.
M. A. Perlstein and Harry Elam, Children's Neurology Service, Cook County Hospital, Chicago.

Space 105

Clinical-Pathologic Correlation in Infants and Children with Damage to the Central Nervous System.
John Bartram and James B. Arey, St. Christopher's Hospital for Children and Temple University School of Medicine, Philadelphia.

Space 106

The Ataraxics in General Hospital Practice.
John D. Schultz, District of Columbia Hospital, Washington, D. C.

Space 109

Surgical Brain Lesions: Their Diagnosis and Pathology.
Rudolph Jaeger and Henry K. Shoemaker, Jefferson Medical College and Hospital, Philadelphia.

Space 110

Therapeutic Approach in Parkinson's Disease.
Lewis J. Doshay, Columbia Presbyterian Medical Center, New York.

HEADACHE

Space 111

Migraine: Pandora's Box.

Keith W. Sheldon, Colorado Springs, Colo.

Space 112

Headache: Statistical Analysis of Pharmacotherapy in Over 5,000 Patients.

Arnold P. Friedman and Samuel Pilchman, Montefiore Hospital, New York.

Space 113

Headaches of Vascular Origin.

Fred W. Wittich, Minneapolis.

Space 114

Headache in Children.

Harry R. Litchfield, Brooklyn, N. Y.

ALCOHOLISM

Space 115

Alcoholism—A Basic Approach to Treatment: Recognition of Tension Tolerance as the Key Factor.

Leon A. Greenberg, Center of Alcohol Studies, Yale University, New Haven, Conn.

Space 118

Citrated Calcium Carbimide in the Treatment of Chronic Alcoholics.

Jackson A. Smith, Dougald D. McLean, and Cecil Wittson, Nebraska Psychiatric Institute, Omaha.

Space 119

A New Tool in the Management of Alcoholism: The Third Major Public Health Problem.

Vernelle Fox, Georgian Clinic, Atlanta, Ga.

Space 120

Alcoholism: Alcoholism Is Your Business.

Marvin A. Block, Buffalo, N. Y., Committee on Alcoholism, American Medical Association.

TRANQUILIZERS AND ANESTHETIZERS

Space 121

Quiescence in Pediatric Surgery.

Max S. Sadove and Theodore J. Frye, University of Illinois Research and Educational Hospitals, Chicago.

Space 122

An Adaptable Adjunct in Anesthesia.

Albert E. Blundell, John W. Pillion, Benson Bodell, and F. Paul Ansbro, St. Catherine's and Holy Family Hospitals, Brooklyn, N. Y.

Space 123

The Intravenous Use of Prochlorperazine in Anesthesiology.

LeRoy W. Krumperman, Sherman C. Meschter, Elbert L. Close, Mary R. Wester, and James C. Erickson, Temple University Medical Center, Philadelphia.

Space 124

Drug-Induced Depressions: Fact or Fallacy.

Frank J. Ayd Jr., Franklin Square Hospital, Baltimore.

Space 125

Prochlorperazine in Treatment of Psychiatric Patients.

Douglas Goldman, Francis M. Stephens, Philip Rosenberg, and Brigitte Rosenberg, Longview State Hospital, Cincinnati.

Space 126

Treatment of Tension States of the Middle Years.

B. Wheeler Jenkins, Germantown Hospital, Philadelphia.

Space 127

Pediatric Use of Prochlorperazine.

Louis Arnold Wikler, Abington, Pa.

Space 129

Safer Sleep for the Profession.

Edwin Matlin, Carlisle Hospital, Carlisle, Pa.

Space 130

Animal Behavior as a Measure of Tranquilization: A Vital Phase of Pharmaceutical Research.

Fred Alexander, Ralph Tedeschi, David Tedeschi, and Robert Tucker, Smith, Kline & French Laboratories, Philadelphia.

Space 131

Behavioral Analysis of Various Central Stimulants.

Don V. Finocchio, Marie McArthur, Ernest B. Sigg, and Jurg A. Schneider, Ciba Pharmaceutical Products, Inc., Summit, N. J.

CANCER

Space 203

Correlative Cellular Morphology Exfoliative Cytology.

Carl J. Lind Jr., Helmuth Sprinz, and Thomas R. Turner, Walter Reed Army Hospital, Walter Reed Army Medical Center, Washington, D. C.

Space 204

Clinical Patterns of Small Bowel Tumors.

Allan D. Callow, James F. Patterson, Alice Ettinger, and G. Gherardi, New England Center Hospital and Tufts University Medical School, Boston.

Space 205

Techniques in Geographic Pathology of Cancer.

Lucia J. Dunham and Harold F. Dorn, National Cancer Institute, Public Health Service, Department of Health, Education and Welfare, Bethesda, Md.

Space 206

Biochemical Biopsy.

Felix Wroblewski, Sloan-Kettering Institute, Memorial Center, New York.

Space 207

Fluorescence Microscopy in Cancer Research.

Ludwig von Bertalanffy, Francis Masin, and Marianna Masin, Mount Sinai Hospital, Los Angeles, and Walter Sussman, Doctors Hospital, Philadelphia.

Space 208

Tobacco and Health: Research Program.

Robert C. Hockett, Tobacco Industry Research Committee, New York.

Space 209

Cancer in Giant Histologic Sections: Methods and Applications of Large Tissue Sections to Study of Irradiation Reactions.

H. J. C. MacMillan and Langdon Parsons, Lemuel Shattuck Hospital, Boston.

Space 210

Roentgenography of the Breast.

J. Gershon-Cohen, Victor Kremens, S. M. Berger, and Helen Ingleby, Albert Einstein Medical Center, Northern Division, Philadelphia.

PATHOLOGY AND LABORATORY

Space 211

Prevention of Streptococcal Infection and Rheumatic Fever: Summary of a Four-Year Study.

Benedict F. Massell, Samuel L. Stancer, Joseph M. Miller, John A. Vecchiolla, Sidney Brodie, and Eliot Young, House of the Good Samaritan, Boston.

Space 212

Staphylococcal Hospital Infections.

Howard H. Steel, Kenneth M. Schreck, H. Taylor Caswell, Norman Learner, Robert R. Tyson, and Elsie R. Carrington, Temple University Medical Center, Philadelphia.

Space 213

Chronic Thyroiditis and Autoimmunization.

Ernest Witebsky, John R. Paine, Kornel Terplan, Noel R. Rose, and Richard W. Egan, University of Buffalo School of Medicine and the Buffalo General Hospital, Buffalo.

Space 214

Radioactive Cobalt Labeled Vitamin B-12 (B-12 CO-60): Application in Clinical and Experimental Medicine.

John W. Frost, Marfred I. Goldwein, and Elizabeth E. Wheeeat, *University of Pennsylvania School of* Medicine, Philadelphia.

Space 215

Morphology of Human Blood Cells.

L. W. Diggs, Dorothy Sturm, and Ann Bell, University of Tennessee College of Medicine, Memphis, Tenn.

Space 216

Estrogens and Components of Coagulation.

J. Frederic Johnson, Wayne State University College of Medicine, Detroit.

Space 218

Echo and Coxsackie Viruses.

Thomas M. Rivers, National Foundation for Infantile Paralysis, New York.

Space 219

Micro and Ultramicro Protein Tests.

Edwin M. Knights Jr., Roderick P. MacDonald, and Jaan Ploompuu, Detroit.

Space 220

Pathologic Findings in Pulmonary Histoplasmosis.

Henry C. Sweany, David F. Gorelick, Fred C. Coller, Charles A. Brasher, and J. H. Jones, Missouri State Sanatorium, Mount Vernon, Mo.

ARTHRITIS AND RHEUMATISM

Space 221

Connective Tissue Diseases.

Bernard M. Norcross and Salvatore R. LaTona, University of Buffalo School of Medicine and Buffalo General Hospital, Buffalo.

Space 222

The Therapy of Rheumatoid Arthritis.

William B. Rawls and Irvin F. Hermann, New York.

Space 223

X-Ray Changes in Rheumatoid Arthritis.

Theodore A. Potter and J. Leland Sosman, Robert Breck Brigham Hospital, Boston.

Space 224

Hypercortisonism in Patients with Rheumatoid Arthritis.

C. H. Slocumb, H. F. Polley, L. E. Ward, and J. G. Mayne, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Space 225

Intra-Synovial Steroid Therapy in Arthritis.

Joseph L. Hollander, Ernest M. Brown Jr., Ralph A. Jessar, Nathan M. Smukler, and J. Rush Shanahan, *University of Pennsylvania School of Medicine* and Hospital, Philadelphia.

Space 226

Local Injection of Painful Extra-articular Disorders.

Otto Steinbrocker, Mortimer Ehrlich, Harold Feinstein, Sidney Berkowitz, and Thomas Argyros, Hospital for Joint Diseases and Lenox Hill Hospital, New York.

Space 227

Joint and Bone Diseases Due to Mycotic Infection.

Elam C. Toone Jr. and John J. Kelly III, Medical College of Virginia Hospital and McGuire Veterans Administration Hospital, Richmond, Va.

Space 228

Fibrositis: Recognition and Management.

Irvin F. Hermann, Kenneth M. Kron, Russell Del Toro, and Richard T. Smith, Benjamin Franklin Clinic, Philadelphia.

Space 229

A Rational Approach to Chemotherapy for Rheumatoid Arthritis.

Arther L. Scherbel and John W. Harrison, Cleveland Clinic Foundation, Cleveland.

Space 230

Do You Have a Question, Doctor?

Donald F. Hill, Tucson, Ariz.; L. Maxwell Lockie, Buffalo; and John W. Sigler, Detroit.

Space 231

The Hands in Arthritis and Related Rheumatic Conditions.

Darrell C. Crain and Antoinette Popovici, Georgetown University Hospital, Washington, D. C.

CARDIOVASCULAR DISEASE

Space 303

The Direct (Open) Surgical Repair of Congenital and Acquired Intracardiac Malformations.

C. W. Lillehei, H. E. Warden, R. A. DeWall, V. L. Gott, P. C. Hodges, R. D. Sellers, M. Cohen, R. C. Read, R. L. Varco, and O. H. Wangensteen, University of Minnesota Medical School, Minneapolis.

Space 304

The Practical Diagnosis of Surgical Heart Disease.

Robert G. Trout, Julio C. Davila, Geraldo Voci, and Robert P. Glover, Presbyterian, Fitzgerald Mercy, Episcopal and Lankenau Hospitals, and St. Christopher's Hospital for Children, Philadelphia.

Space 307

Suprasternal Transaortic Coronary Arteriography.

J. Stauffer Lehman, William M. Lemmon, Randal A. Boyer, and Lamberto Bentivoglio, Hahnemann Medical College and Hospital of Philadelphia, Philadelphia.

Space 308

Treatment of Anxiety with Vasomotor Symptoms: A Controlled Study with a Statistical Analysis of the Results.

Arthur Bernstein and Franklin Simon, Newark Beth Israel Hospital, Newark, N. J.

Space 309

Cardio-Salutary Effects of Mephentermine.

M. J. Oppenheimer, P. R. Lynch, and George H. Stewart, Temple University School of Medicine, Philadelphia.

Space 310

Symptoms, Signs, and Treatment of Internal Carotid Artery Insufficiency Syndromes.

James F. Toole and Brooke Roberts, Hospital of the University of Pennsylvania, Philadelphia.

HYPERTENSION

Space 311

Treatment of Essential Hypertension.

Raymond F. Grenfell and James G. Hilton, University of Mississippi Medical Center, Jackson, Miss.

Space 312

Lipotropic Vitamin Therapy: Effect Upon Mortality Rate in Hypertensive Hypercholesterolemic Subjects.

J. Q. Griffith Jr., Philadelphia, and B. Marr Lanman, New York.

Space 313

Pressure and the Patient: Their Treatment in Hypertension.

Richard A. Dunsmore, Lillian D. Dunsmore, and Arthur Goldman, Philadelphia General Hospital, Philadelphia; and Lyman A. Fulton, Basil Williams, and Allan Barker, University of Utah College of Medicine, Salt Lake City.

Space 314

Progress in the Treatment of Hypertension.

Garfield G. Duncan, Jerome Waldron, William K. Jenson, Robert J. Gill, Richard J. Eberly, and Kenneth R. Knox, Pennsylvania Hospital, Philadelphia.

Space 316

Arterial Hypertension: Five-Year Survival Experience.

Joseph H. Hafkenschiel, Jerry E. Schmitthenner, and Earl A. Daugherty, Lankenau Hospital, Philadelphia.

TUBERCULOSIS

Space 317

Epidemiology and Clinical Aspects of Sarcoidosis.

Martin M. Cummings, Edward Dunner, R. H. Schmidt Jr., John B. Barnwell, and John H. Williams Jr., Veterans Administration, Washington, D. C.

Space 318

Air Hygiene in Tuberculosis.

Richard L. Riley, William F. Wells, Cretyl C. Mills, Walenty Nyka, Patrick B. Storey, and Ross L. McLean, Veterans Administration Hospital, Johns Hopkins School of Medicine and Hygiene and Maryland Tuberculosis Association, Baltimore.

Space 319

Circumscribed Pulmonary Lesions: A Plea Against Complacency.

Robert W. Jamplis, J. Ian McNeill, Sidney P. Mitchell, Francis S. North, George A. Wood, and John F. Weigen, Palo Alto Clinic, Palo Alto, Calif.

Space 320

Time to Test: Tuberculin Skin Test.

Julius L. Wilson, National Tuberculosis Association, American Trudeau Society, New York.

OBSTETRICS AND GYNECOLOGY

Space 321

Perinatal Mortality Pathology.

Frederick H. Falls and Charlotte S. Holt, Illinois State Department of Public Health, Chicago.

Space 322

The Modern Endocrine Approach to the Diagnosis and Management of the Infertile Patient.

Herbert S. Kupperman, Jeanne A. Epstein, Meyer H. G. Blatt, Donald K. Briggs, and Abraham Stone, New York University–Bellevue Medical Center and the Margaret Sanger Research Bureau, New York.

Space 323

The Enigma in Obstetrics: Toxemia of Pregnancy.

Henry B. Turner and H. P. K. Agersborg Jr., University of Tennessee College of Medicine and City of Memphis Hospitals, Memphis, Tenn.

Space 324

How to Improve Your Body Temperature Studies.

Edward F. Keefe, New York.

Space 325

Diseases of the Cervix and Their Office Management.

Henry C. Falk, Beth Israel Hospital, New York.

Space 326

Cervicitis in Office Practice.

Malcolm L. Barnes and George S. Allen, University of Louisville School of Medicine and Norton Memorial Infirmary, Louisville, Ky.

Space 327

Estrogen Biosynthesis by Postmenopausal Human Ovaries.

H. M. Lemon, H. H. Wotiz, L. Parsons, S. C. Sommers, and J. W. Davis, Boston University School of Medicine and Massachusetts Memorial Hospitals, Boston.

Space 328

Gynecological Applications of Sulfaethylthiadiazole.

Bernard W. Albers, St. Joseph's Hospital, Lancaster, Pa.

Space 331

Diagnosis and Treatment of Common Forms of Vaginitis.

Warren R. Lang, A. E. Rakoff, and Joseph G. Stella, Jefferson Medical College, Philadelphia.

UROLOGY

Space 403

Renal Angiography: *Indications and Experience with a Safe Technique.*

E. F. Poutasse and W. J. Engel, Cleveland Clinic, Cleveland.

Space 404

Hypogonadism in the Male.

Arthur A. Roth, *Western Reserve University*, Cleveland City Hospital, and Mount Sinai Hospital, Cleveland.

Space 407

***Male Infertility*: Diagnosis and Treatment.**

D. Cramer Reed, William H. Browning, and Harold F. O'Donnell, Wichita, Kan.

Space 408

Diuretic Therapy.

Ralph V. Ford, Charles L. Spurr, John H. Moyer, Carroll A. Handley, and J. B. Rochelle, Baylor University College of Medicine and Veterans Administration Hospital, Houston, Texas.

Space 409

Twin Coil Artificial Kidney.

George E. Schreiner and Leonard B. Berman, Georgetown University Medical Center, Washington, D. C.

Space 410

Ureteral Stone: *Treatment and Analysis.*

W. M. Coppridge, L. C. Roberts, Jack Hughes, Watts Hospital, Durham, N. C., and V. I. Mann, University of North Carolina, Chapel Hill, N. C.

GASTROENTEROLOGY AND PROCTOLOGY

Space 411

Pain Patterns: Sites and Behavior of Pain in Certain Common Diseases of the Upper Abdomen.

L. A. Smith, N. A. Christensen, N. O. Hanson, D. E. Ralston, R. W. P. Achor, K. G. Berge, and A. H. Bulbulian, Mayo Clinic and Mayo Foundation, *Rochester, Minn.*

Space 412

The Treatment of *Autonomic Symptoms* of the Gastrointestinal Tract.

Charles W. Smith and Chester G. Thomas, Harrisburg, Pa.

Space 414

Oxyphenonium and Gastric Secretion: Suppression of Hyperchlorhydria Induced by Prednisone and Reserpine.

Daniel Liebowitz, John V. Carbone, and Peter H. Forsham, University of California Medical Center, San Francisco.

Space 415

The *Generalist Looks* at Constipation.

W. E. Henrickson, Henrickson Clinic, Poplar Bluff, Mo.

Space 416

***The Management of Bowel* Evacuation in Surgical Patients.**

Robert Turell, New York.

NUTRITION

Space 417

An Improved Method in Quantitative Dietetics.

Harold C. Sox, *Palo Alto* Medical Research Foundation, *Palo Alto, Calif.*

Space 418

Food Facts and Fallacies.

Philip L. White, *Eugene* H. Stevenson, and Mary Jane Kibler, Council on Foods and Nutrition, American Medical Association, Chicago.

Space 419

A Practical Approach to Management of Overweight: With *Special Reference to a* New Non-stimulating Anorectic.

Raymond J. Gadek, Harold S. Feldman, and Ralph Lucariello, New York *Medical College, Metropolitan Medical* Center, Bird S. *Coler* Memorial Home and Hospital, and Flower and Fifth Avenue Hospitals, New York.

Space 420

***Congenital Handicaps* from Malnutrition: The Importance of Adequate Nutrition Preconceptually.**

E. L. Severinghaus and H. Pfaltz, Hoffmann-La Roche, Inc., Nutley, N. J.

PHYSICAL MEDICINE AND REHABILITATION

Space 421

***Physical Medicine* and Rehabilitation in Community Hospitals.**

Albert A. Martucci, Philadelphia General and Episcopal *Hospitals, Philadelphia*, and Abington *Memorial* Hospital, Abington, Pa.

Space 422

Practical Rehabilitation in Community Hospitals.

Harold Lefkoe and Albert A. Martucci, Commission on Physical *Medicine and Rehabilitation*, Philadelphia County Medical Society, and Medical Society of the State of Pennsylvania, Philadelphia.

Space 423

The Artificial Limb Program in the United States.

Harold W. Glattly, Prosthetics Research Board, National Academy of Sciences, Washington, D. C.

Space 424

Training Courses in the Artificial Limb and Brace Field.

Lester A. Smith, American Board for Certification of the Prosthetic and Orthopedic Appliance Industry, Inc., Washington, D. C.

Space 425

Artificial Respiration.

Ralph E. DeForest and Howard A. Carter, Council on Medical Physics, American Medical Association, Chicago.

Space 426

Occupational Therapy: One Rehabilitation Service.

Dean W. Roberts, Jayne Shover, and Elizabeth Wagner, National Society for Crippled Children and Adults, Inc., Chicago.

REPORTS OF OFFICERS

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Secretary is respectfully submitted:

Membership

The number of physicians holding membership in the American Medical Association increased by 3,430 during the year ending June 30, 1957, as compared with the same period ending June 30, 1956. A breakdown of the membership records as of June 30 indicates the following:

	1957	1956
Active Paid Members	133,034	130,666
Active Members (Dues unpaid by June 30)	None	3,479
Active Members exempt from dues	10,216	11,082
Associate Members	6,127	6,313
Service Members	14,059	8,541
Affiliate Members	293	269
Honorary Members	91	94
Total Membership on June 30	163,817	160,387

The total income from 1957 membership dues for the first six months of 1957 was $3,251,137, which was an increase of $59,845 over the same period for 1956.

A change in the A. M. A. Constitution and Bylaws, effective Jan. 1, 1957, made membership available to reserve officers of the Armed Forces and the Public Health Service who are on extended active duty. This change provided the opportunity for 5,515 reserve officer physicians to become Service Members of the American Medical Association.

The following table shows the number of physician members of state and territorial medical societies who also hold membership in the American Medical Association. Comparative figures are given as of June 30 for both 1956 and 1957 (apportionment of delegates is based on the membership as recorded on Dec. 31 of each year (Bylaws, Chapter IX, Section 1 (C) (1)).

The increase of 3,430 members was effected even though the names of 3,516 physicians were removed from the membership rolls before June 30, because their A. M A. membership status for the year 1957 had not been established through their constituent medical associations. The apparently dues-delinquent physicians were asked to contact the secretaries of their respective societies early in May. If the physician's eligibility for membership in the association had not been established by June 1, 1957, the physician was then notified that he would be dropped from membership in the American Medical Association within 30 days under the provisions of Chapter III, Section 5 of the A. M. A. Constitution and Bylaws. A copy of each suspension notice and a list of the physicians to whom the notice was mailed were sent at the same time to the secretary of the respective constituent association.

This year 7,909 physicians were notified that their membership for 1957 had not been established as of June 1; however, it was only necessary on June 30 to drop 3,516 physicians as members. Observance of the fact that A. M. A. dues are due and payable on Jan. 1 of each calendar year to the constituent association for transmittal to the Secretary of the A. M. A. would help to reduce the number of delinquent letters which are mailed, as well as reduce the number of physicians who are dropped from the membership rolls.

The dues delinquency date for suspension of membership will remain June 1 in 1958. A physician cannot be reinstated for membership in the American Medical Association until his dues delinquency for the year in which he was dropped from membership is cleared through his constituent medical association.

A. M. A. Membership on June 30

State	No. of Physicians in State	Active Members		Associate Members	Total 1957	Total 1956
		Dues Paying	Dues Exempt			
Alabama	2,321	1,488	282		1,770	1,723
Alaska	102	76	6	4	86	95
Arizona	1,018	774	37	40	851	813
Arkansas	1,626	940	103		1,043	1,103
California	20,763	14,093	574	1,158	15,825	15,332
Canal Zone	175	20	14		34	41
Colorado	2,385	1,599	257	229	2,085	2,104
Connecticut	3,777	2,365	164		2,529	2,583
Delaware	509	341	37	3	381	390
District of Columbia	2,483	1,145	110	224	1,479	1,538
Florida	4,530	2,662	156	73	2,891	2,797
Georgia	3,391	2,136	269	60	2,465	2,470
Hawaii	579	396	25	30	451	409
Idaho	568	471	13	2	486	500
Illinois	12,529	8,742	945		9,687	9,908
Indiana	4,120	3,268	556		3,824	3,814
Iowa	2,829	1,983	351	27	2,361	2,463
Kansas	2,254	1,275	284	1	1,560	1,592
Kentucky	2,638	1,686	48	103	1,837	1,921
Louisiana	3,292	1,753	14	110	1,877	1,913
Maine	985	535	109	11	655	655
Maryland	3,884	1,709	234	108	2,051	1,985
Massachusetts	8,715	4,375	602	66	5,043	5,246
Michigan	7,900	5,219	372	260	5,851	6,039
Minnesota	4,140	2,916	395	49	3,360	3,380
Mississippi	1,562	1,075	172	3	1,250	1,295
Missouri	4,902	2,781	526		3,307	3,470
Montana	621	493	28	44	565	588
Nebraska	1,581	1,149	20	101	1,270	1,303
Nevada	228	198	5		203	192
New Hampshire	752	453	52	12	517	546
New Jersey	6,737	5,126	241	386	5,753	5,808
New Mexico	632	454	43		497	515
New York	31,146	15,816	252	943	17,011	18,242
North Carolina	3,913	2,558	179	4	2,741	2,714
North Dakota	494	369	36	1	406	428
Ohio	10,873	7,207	544		7,751	7,749
Oklahoma	2,226	1,456	155	145	1,756	1,798
Oregon	2,098	1,270	69	296	1,635	1,613
Pennsylvania	14,727	10,241	228	908	11,377	11,502
Puerto Rico	900	198	14		212	213
Rhode Island	1,036	675	99		774	768
South Carolina	1,741	1,113	101	16	1,230	1,142
South Dakota	534	383	5	35	423	441
Tennessee	3,535	2,167	236	1	2,404	2,410
Texas	8,750	6,279	371	289	6,939	6,922
Utah	1,026	709	51	2	762	774
Vermont	563	355	53		408	409
Virginia	3,652	1,756	242	51	2,049	2,007
Washington	3,238	2,403	224	1	2,628	2,625
West Virginia	1,696	1,290	10	119	1,419	1,406
Wisconsin	3,926	2,799	292	182	3,273	3,322
Wyoming	263	229	11		240	237
Transfer Pending		65			65	29
Totals	211,465	133,034	10,216	6,127	149,377	151,48
		Service Members			14,059	8,541
		Affiliate Members			290	269
		Honorary Members			91	94
		Total no. of members (all classifications)			163,817	160,387

Convention Registration Bureau

This department functions in connection with both the Annual and Clinical Meetings of the American Medical Association, and is responsible for the proper registration and admittance of all member physicians and their guests.

The registration of the Seattle Clinical Meeting and the New York Annual Meeting is shown in detail below. The total cost of operating the Registration Bureau at the Seattle meeting was $6,409. The cost of operating the Registration Bureau at the New York meeting was $11,060.

REGISTRATION, SEATTLE, NOV. 27-30, 1956

Physicians	2,813
Residents	143
Interns	76
Students	264
Nurses	440
Technicians	177
Physicians' Guests	1,674
Total	5,587
Technical Exhibitors	450
Technical Exhibitors' Guests	245
Grand Total	6,282

REGISTRATION, NEW YORK, JUNE 3-7, 1957

Physicians	19,469
Residents	2,915
Interns	1,504
Students	994
Nurses	1,674
Technicians	999
Physicians' Guests	21,755
Total	49,310
Technical Exhibitors	4,411
Technical Exhibitors' Guests	2,126
Grand Total	55,847

Admittance to the Technical and Scientific Exhibits was limited to physicians only on Tuesday and Wednesday mornings during the New York Annual Meeting.

This restricted attendance proved highly beneficial to the physician, especially in view of the large total registration of 55,847.

Statement of Association Policies

Under the direction of the Secretary an abstract of policies of the House of Delegates is being prepared by a research abstracter trained in the library and medical sciences. This volume, which should be ready for publication at the end of this year, will cover all House actions dating from 1847 to the present time. It will be an encyclopedia with abstracts chronologically arranged and supplemented by a detailed index. To assure continuity, supplements will be published at five year intervals with a cumulative index. This reference work, presenting current and past policies of the Association in a simplified, orderly form, will help to clarify nomenclature, facilitate research at headquarters, and serve as a valuable guide for state and local medical societies.

Field Activities

The Secretary and Assistant Secretary have continued to attend many state and local medical meetings. The liaison established in this manner helps solve many minor problems and has proved satisfactory to both the headquarters office and to the societies concerned. In addition, each year brings more and more agencies and organizations that require some type of contact. Members of the staff who have a primary interest in these organizations are used in many instances but there are a number of these contacts that have to be carried on by the Secretary and Assistant Secretary.

On Jan. 1, 1957, the position of Field Director was established and made a part of the Secretary's Office. Mr. Thomas A. Hendricks was appointed to that position and serves as an important link in the communications chain between state and county societies and the A. M. A. He also attends various meetings bearing on health activities. These vary from the United States Chamber of Commerce to the Community Relations Committee of the AFL-CIO. During the first six months of this year Mr. Hendricks has attended meetings in 20 states and the District of Columbia and has traveled over 30,000 miles.

World Medical Association

The American Medical Association has been very active in the affairs of the World Medical Association since it was founded. At the present time the chairman of your Board of Trustees and your President-elect are both members of the council of the W. M. A., and a past-president of the American Medical Association is the secretary-general.

Your Board of Trustees feels that the World Medical Association fills an important place in world affairs pertaining to medicine and public health. In order to support that organization a United States Committee has been formed and individuals may become members of this committee by the payment of annual dues of $10. This important organization already supported by your Association is worthy of your individual support.

Appreciation

The Secretary wishes to express to the officers and delegates his sincere appreciation for the many courtesies he has received from them, as well as from the officers of the various constituent organizations. Without the friendly cooperation of these individuals the position of Secretary would be a much more difficult one. The Secretary also wishes to express his deep appreciation to the many employees of the Association for their loyal cooperation in carrying on the multiple and complex affairs of the Association.

Respectfully submitted, George F. Lull, M.D., Secretary.

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Board of Trustees is respectfully submitted:

Report on Matters Referred by House of Delegates

Periodic Publication.—The Board of Trustees considered resolution 1, introduced by the Nebraska delegation, recommending the establishment of a new periodic publication designed to make known the activities and services of the Association to all people in the health field.

The Board of Trustees requests the approval of the House to defer action on resolution 1 from the New York session until it has had an opportunity to evaluate the effectiveness of *Today's Health* under the reorganization of that periodical approved by the Board.

Referrals.—All resolutions referred to the Board of Trustees have been forwarded to the several councils, committees or departments concerned. As soon as reports are available from these groups, they will be transmitted to the House of Delegates for action.

Distinguished Service Award

The Board requests that members of the Association submit nominations for the recipient of the Distinguished Service award. If possible, these nominations should be received in the Secretary's Office by March 1 of each year.

Annual and Clinical Meetings

The following places and dates have been selected for the Annual and Clinical Meetings of the Association:

Annual Meetings: 1958—San Francisco, June 23-27; 1959—Atlantic City, June 8-12; 1960—Chicago.

Clinical Meetings: 1958—Minneapolis, Dec. 2-5; 1959—Dallas, Texas, Dec. 1-4; 1960—Washington, D. C.

Invitations for the 1961 and 1962 annual meetings of the Association were considered by the Board of Trustees. The Board respectfully recommends that New York be selected for 1961 and San Francisco for 1962.

Publications of the American Medical Association

Included in this phase of Association work are The Journal of the American Medical Association, specialty journals, Quarterly Cumulative Index Medicus, Standard Nomenclature of Diseases and Operations, and books published from time to time by the scientific councils [illegible] mittees of the American Medical Association. H[illegible] latter are reported on separately [illegible] various councils and [illegible]

Circulation

During the fiscal year ending June 30, 1957, the average net paid circulation of THE JOURNAL and the nine specialty journals continued to show a substantial increase. The average net paid weekly circulation for THE JOURNAL was 174,587. This was an increase of 12,574 paid copies per week over the previous fiscal year. The average total distribution for each weekly issue was 179,000.

A comparison of the average net paid monthly circulation for each of the nine specialty journals during the last two fiscal years shows:

	7/1/56 to 6/30/57	7/1/55 to 6/30/56
A. M. A. Journal of Diseases of Children	8,212	7,521
A. M. A. Archives of Dermatology	5,401	4,798
A. M. A. Archives of Industrial Health	3,236	3,063
A. M. A. Archives of Internal Medicine	10,310	9,068
A. M. A. Archives of Neurology & Psychiatry	5,564	4,849
A. M. A. Archives of Ophthalmology	7,497	6,893
A. M. A. Archives of Otolaryngology	5,810	5,440
A. M. A. Archives of Pathology	4,216	3,692
A. M. A. Archives of Surgery	8,357	7,449

Two volumes of the Quarterly Cumulative Index Medicus were released during this fiscal year and their net paid circulation was:

Volume 55 (January to June, 1954)	4,565
Volume 56 (July to December, 1954)	4,528

A comparison of the classification of subscribers who received the April 28, 1956, issue and the April 27, 1957, issue of THE JOURNAL follows:

	% of Total Net Paid Subscriptions	
Subscriber Classification	4/27/57	4/28/56
A. M. A. Membership Benefit	67.5	67.0
Residents, Interns, and Students	9.6	7.0
Men and Women	7.9	11.1
M. D. Subscribers	7.8	6.8
Firms and Corporations	3.4	3.6
Hospitals	1.6	1.7
U. S. Military	0.9	1.1
Schools and Colleges	0.7	0.8
Clinics and Health Groups	0.3	0.6
Public Libraries	0.1	0.1
D.D.S.	0.1	0.1
R.N.	0.1	0.1
(Single Copy Sales	(8)	
	100.0%	100.0%
Total Net Paid Circulation	177,878	171,480

A comparison of the classification of subscribers who received the May, 1956, and May, 1957, issues of the A. M. A. specialty journals follows:

A comparison of the classification of subscribers who received volumes 55 and 56 of the Quarterly Cumulative Index Medicus follows:

	% of Total Net Paid Subscriptions	
Subscriber Classification	Volume 56	Volume 55
Hospitals	35.3	35.7
Firms and Corporations	20.1	21.7
Schools and Colleges	18.4	15.6
M.D. Subscribers	9.1	11.7
Clinics and Health Groups	8.3	10.1
Men and Women	3.9	1.8
Public	2.9	1.0
U. S.	1.6	2.1
(Single Copy Sales)	0.4	0.3
	100.0%	100.0%
Total Net Paid Circulation	4,528	4,565

During the fiscal year ending June 30, 1957, the renewal percentage for each of the scientific periodicals continued at a high level. The average renewal percentage for each publication is indicated as follows:

	Renewal Average 7/1/56 6/30/57
Journal of the A. M. A.	83%
A. M. A. Journal of Diseases of Children	82
A. M. A. Archives of Dermatology	87
A. M. A. Archives of Industrial Health	90
A. M. A. Archives of Internal	79
A. M. A. Archives of Neurology	84
A. M. A. Archives of	83
A. M. A. Archives of	85
A. M. A. Archives of	87
A. M. A. Archives of	81
Quarterly Cumulative Index Medicus	86

The practice of including subscription order forms in various issues has been continued, and a number of subscriptions for the various publications have been received as a result of these insertions. A series of successful advertisements for subscriptions was placed in *The New Physician*, the official publication of the Student American Medical Association. Similar advertisements have been scheduled in the subscription catalogs of the world's leading magazine agencies. This series of advertisements will be continued during the next fiscal year.

Sample copies, promotion circulars and subscription order forms for the scientific publications were distributed to physicians, dentists, and medical and professional personnel at the following meetings:

1. American Academy of General Practice
2. American College of Surgeons
3. American Dental Association
4. American Library Association
5. American Hospital Association
6. American Nurses Association
7. American Orthopsychiatric Association
8. American Public Health Association
9. Annual-American Medical Association
10. Clinical-American Medical Association
11. Student American Medical Association

Subscriber Classification of Specialty Journals

% of Total Net Paid Subscribers

Subscriber Classification	Journal of Diseases of Children May, 1957	Journal of Diseases of Children May, 1956	Archives of Dermatology May, 1957	Archives of Dermatology May, 1956	Archives of Industrial Health May, 1957	Archives of Industrial Health May, 1956	Archives of Internal Medicine May, 1957	Archives of Internal Medicine May, 1956	Archives of Neurology and Psychiatry May, 1957	Archives of Neurology and Psychiatry May, 1956	Archives of Ophthalmology May, 1957	Archives of Ophthalmology May, 1956	Archives of Otolaryngology May, 1957	Archives of Otolaryngology May, 1956	Archives of Pathology May, 1957	Archives of Pathology May, 1956	Archives of Surgery May, 1957	Archives of Surgery May, 1956
A. M. A. Membership Benefit	35.5	33.4	15.9	15.2	5.5	5.3	28.6	26.5	26.2	23.7	37.1	36.1	27.8	26.5	15.2	14.7	49.4	47.8
Residents, Interns, and Students	3.7	3.0	3.6	2.0	1.8	0.8	5.6	4.1	3.9	2.2	3.6	2.6	1.8	1.4	3.6	3.1	3.1	2.3
Men and Women	6.6	5.1	10.2	5.0	6.0	8.4	6.8	6.8	7.3	7.4	7.3	5.4	9.9	5.3	8.8	6.7	3.4	5.2
M. D. Subscribers	23.1	26.6	35.0	42.0	13.3	11.2	26.6	29.0	21.7	27.0	29.9	33.0	30.5	37.3	23.1	23.0	21.0	21.0
Firms and Corporations	8.5	8.3	12.2	8.8	46.7	41.8	8.8	8.4	10.5	7.9	7.5	8.3	10.6	7.8	8.8	8.8	4.8	4.2
Hospitals	13.1	12.7	12.6	11.9	4.6	4.0	13.8	15.6	17.6	18.6	6.8	5.6	11.2	11.3	22.1	22.2	11.6	12.2
U. S. Military	1.4	1.8	2.6	2.8	7.1	7.9	4.2	2.6	2.9	2.1	2.2	3.7	1.6	2.1	3.1	2.4	1.3	1.5
Schools and Colleges	5.5	5.8	5.7	6.8	9.3	12.9	4.5	4.2	8.3	6.8	4.4	4.0	5.2	5.1	11.3	12.9	3.3	3.5
Clinics and Health Groups	2.3	2.9	1.4	4.3	3.4	5.8	0.7	2.3	1.4	3.6	0.9	1.1	0.9	2.6	3.2	3.5	1.4	1.7
Public Libraries	0.2	0.3	0.6	1.0	2.1	1.8	0.4	0.5	0.2	0.6	0.3	0.2	0.3	0.5	0.8	0.7	0.3	0.4
D. D. S.	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.3	0.1
R. N.	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single Copy Sales	(1)	...	(1)	...	0.1	0.0	...	...	0.0	0.0	(1)	...	0.1	0.0	0.0	0.0	0.1	0.0
Total Net Paid Circulation	7,929	7,992	5,198	5,117	3,041	3,035	10,056	9,860	5,248	5,332	7,221	7,106	5,558	5,755	3,982	3,994	8,632	8,150

An increase in circulation of The Journal of the A. M. A. is expected during the next fiscal year because of an increase in the number of physicians entering private practice after completing internship and residency programs. Several medical schools are considering including blanket subscriptions for their advanced classes as a part of the student registration fee.

Present plans indicate an average net paid circulation of approximately 181,000 for The Journal for the next fiscal year.

A direct mail promotion test was successfully made which increased the circulation of the *A. M. A. Archives of Surgery*, and proposed plans for further mail promotion tests will be included in the 1958 Circulation Department budget.

Present plans indicate an average net paid circulation for the next fiscal year for each of the nine specialty journals and the 1956 volumes of the Quarterly Cumulative Index Medicus as follows:

A. M. A. Journal of Diseases of Children	8,200
A. M. A. Archives of Dermatology	5,400
A. M. A. Archives of Industrial Health	3,200
A. M. A. Archives of Internal Medicine	10,300
A. M. A. Archives of Neurology & Psychiatry	5,450
A. M. A. Archives of Ophthalmology	7,400
A. M. A. Archives of Otolaryngology	5,800
A. M. A. Archives of Pathology	4,200
A. M. A. Archives of Surgery	8,600
Quarterly Cumulative Index Medicus	4,650

The Journal of the American Medical Association

The increase in circulation and total advertising volume for the past year reflects a steady increase over the years for The Journal. While most of the circulation, obviously, is pointed to members of the Association and subscribers in the United States, this periodical nevertheless has an international circulation and goes into more than a hundred foreign countries.

A year's experience has been gained with the publishing of The Journal in facilities other than the A. M. A. headquarters. While many problems were encountered during the first few months and while some still remain to be solved, the change in operational facilities was accomplished without too much difficulty. The major problems concerned shipment of copies so that they would be received undamaged, and the time of arrival. Through the use of heavier wrapping paper and tying together some of the journals while in transit to major distributing points, damages have been reduced to a minimum. Of course each subscriber can request a copy for replacement if he receives one which cannot be used. The Journal still is arriving in some places in the country several days later than when it was mailed from Chicago, but a study has been made by the printers and by A. M. A. headquarters to determine how best to overcome this difficulty. It is contemplated that in the near future a special request will be made to the Post Office which if acted on favorably will decrease this lag in time.

A number of comparatively minor changes were made in the format of The Journal during the year, but beginning with the Sept. 7 issue a significantly redesigned book will appear. The Board of Trustees approved the study and consultation which resulted in expert advice being obtained for these modifications.

Among the departments that have been more recently introduced, the one entitled Medicine at Work seems to have achieved the greatest response. This section, which is intended to tell the story of how medical problems are being solved in this country, has been widely quoted in medical and nonmedical, even lay, publications. For example, *Reader's Digest* has reprinted two of the stories. Other innovations are being studied with the view to improving the service which it is intended that The Journal provide to the members of the Association and to the subscribers. Changes are made, however, only after careful studies have been made; from time to time since 1950 general surveys have been conducted to determine the wishes of the A. M. A. members concerning its publications. Another section which has been added and seems to have been quite well received is Research Reviews. Still another is Washington Feature. More Section papers were accepted last year than in previous years and, in addition, the increased activities of several of the councils and other departments have resulted in the appearance of a number of articles under sponsorship by these councils and committees; for example, the Council on Drugs, Council on Foods and Nutrition, Law Department, and Council on Medical Service. A change in the type size and variability of the size of illustrations for these articles and others have resulted in making The Journal more easily readable. The introduction of a brief explanatory note at the beginning of each article continues to be well received for the help it provides the readers. In addition, it appears to have increased readership of the articles as a group.

The Medical Literature Abstracts Department contributes from 15 to 25 pages of abstracts to each issue of The Journal. A total of about 2,400 abstracts published in 1956 were selected from approximately 1,200 publications. Not all of the publications received are regularly abstracted, but selections are made from the world literature on the basis of the interest of the articles for the practitioner. Periodicals in 12 different languages are reviewed regularly. The staff of this department also translates documents and letters in foreign languages which are received from other countries.

More than 2,000 inquiries, usually reflecting some clinical problem for a practicing physician, were received in the Queries and Minor Notes department for the year ending June 30, 1957. About 50% of the questions were answered by previously published queries, articles, or references. More than 500 consultants assisted The Journal in answering the remaining questions, usually related to some specific medical specialty. During the same 12-month period 899 queries and answers were published in The Journal. Fourteen per cent of the published queries incorporated more than one answer. In addition, 95 comments concerning previous queries were published. There were 25% more Queries and Minor Notes published than during the preceding year and 50% more page space was devoted to this section of The Journal.

Over 40% of the questions that were submitted originated from physicians practicing in communities with a population under 25,000, and three-fourths of all the questions came from population areas under 250,000 persons. Seventy-five per cent of the queries came from practicing A. M. A. members; about 5% from physicians in foreign countries; and the remainder from interns, residents, and doctors in other fields. During the past year the predominant requests for clinical information from this department were in the fields of dermatology and allergy, with the causes and prevention of anaphylactic reactions the most common question.

During the fiscal year the Medical News department published 2,063 news items. There were a total of about 253 pages of The Journal devoted to Medical News for the year, including 15 pictures. During the same period, 3,384 obituary notices were published.

Specialty Journals

The transfer of the specialty journals' printing operation to the Baird-Ward Printing Company, Inc., Nashville, Tenn., has been accomplished with comparatively little difficulty. The publication schedule is being met and mailing is made on Friday of the first full week of each month. The only interference with this schedule occurs during the vacation period and may affect mailing by two or three days.

Following the transfer of the printing operation, arrangements were concluded to have engravings made in Nashville. In addition to this being a move of convenience, it proves also to be one of economy. Under the new arrangement, engravings cost less per unit and the expense of shipping cuts from Chicago to Nashville is saved. To achieve greater economy, zinc half-tone engravings are used for appropriate subjects on short-run journals.

Special cost arrangements with a printer of color inserts has resulted in a more extensive use of color illustrations. These arrangements are based on volume, grouping of color jobs, a fixed press run, and working with color prints instead of transparencies wherever possible. This has resulted in lowering the A. M. A.'s contribution to color reproduction and also in reducing the charge against the author. While substantial progress has been made in increasing the use of color in the specialty journals, even lower costs are desirable. Experimentation is going forward with the grouping on one page of color subjects from several manuscripts, thereby distributing and reducing the cost to each author.

The specialty journals have been offered to specialty groups as organs in which they may publish papers delivered before their groups. Affiliation arrangements are in force making the *A. M. A. Archives of Surgery* the official publication for the Central and Western Surgical Associations; the American Neurological Association is affiliated with the *A. M. A. Archives of Neurology and Psychiatry;* and the *A. M. A. Archives of Pathology* is the official publication for the American Society of Experimental Pathology. Discussions toward the affiliation of other societies with other specialty journals are continuing.

A new cover design and slight modification in page format were introduced with the January issue of the specialty journals. The elements contributing to the attractiveness of the cover are simplicity and cleanliness. The design is fluid enough to attractively accommodate varying lengths of contents listing. By the use of simple line or block treatment and by placing the contents on a white background, the design furnishes maximum contrast and greater legibility.

The change in page format was confined to the title, subtitle, and authors' names. A Bodoni bold type face was substituted for Coronet bold in the title. This eliminated the difficulty encountered when reading a formula or an abbreviation in script capitals. The use of antique italics for subtitles and Spartan bold for the authors creates a desirable distinction between these parts. The arrangement realized a saving in space.

The Circulation Department reports an increase in the average net paid circulation for the specialty journals during the fiscal year ending June 30, 1957. A direct mail promotion test was successfully made which increased the circulation of the *A. M. A. Archives of Surgery.* The results were encouraging to the point where plans for further mail promotion tests are being made. Some reduction in circulation figures is forecast for the next year for all medical journals as a result of curtailment in the government hospital program. This will also be felt by the specialty journals.

The specialty journals' Editorial Department is continuing with its plan of analyzing its requirements and raising its standards to a closer relationship with industry practices. At the beginning of the year it employed eight manuscript editors, one proofreader, and one supervisor. Standards were reviewed and raised to compare with those maintained by the medical publishing industry, and compensation adjusted on the basis of production output. This anaylsis and adjustment has resulted in a reduction to the equivalent of four and one-half manuscript editors, one proofreader, and a supervisor. It is expected that continued attention to staff requirements and production standards will stabilize the department budget in the face of rising labor costs.

The sum total of the advantages gained from transferring the printing operation, changing engravers, centralizing fulfillment operations, and continually analyzing and adjusting staff requirements has resulted in a much more favorable operating margin than the Specialty Journals' Department has ever experienced.

During the first eight months of 1957 the specialty journals published 914 original articles, 25 progress reports or general reviews, 161 case reports or clinical reports, 15 illustrated articles or scientific exhibits, and 20 editorials, or a total of 1,135 articles. The total of unpublished articles for all specialty journals is 773. It is anticipated that 450 more papers, covering all categories, will be published during the remainder of the year. The number of articles published in 1957 represents an increase of approximately 9% over the volume of scientific papers published during the first eight months of 1956.

Quarterly Cumulative Index Medicus

During the year ending June 30, two volumes of the Index were published: volume 55 (January-June, 1954) in August, 1956, and volume 56 (July-December, 1954) in March of this year. The former ran to 1,800 pages and included 32,630 articles, while the latter covered 1,705 pages and 31,052 articles. A book of 1,800 pages is the largest the present bindery can handle. Under our policy of adding only a few new titles of special importance to the list of periodicals indexed, 6 were added in volume 55 and 19 in volume 56.

By the end of the report period all the editorial work was completed on volume 57 (January-June, 1955), and editing and reproducing volume 58 (July-December, 1955) were well under way. Although this accomplishment does not seem to indicate a gain, some progress has been made in indexing foreign periodicals where a backlog had accumulated; actually, six weeks have been gained in the past year.

The manual for indexing, which consists primarily of directives for the use of subject headings and cross references, was revised, reorganized, and expanded during the year, and a beginning made on a manual for revising and proofreading.

In order to assess the value of the section on new books, a questionnaire was sent on March 1, 1957, to 105 subscribers in the United States and 38 in foreign countries. Selection of the sample was on a proportionate basis by states and by the principal categories of hospital libraries, physicians, special libraries, and commercial users (pharmaceutical houses and publishers). Ten foreign medical schools were included to supplement information previously obtained from schools in the United States. A 61% response gave a workable sample of opinions. It was found that 83% of those answering considered this section of value and 71% wanted it continued as a separate section rather than combined with the periodical section. About half these subscribers used the list for both English and foreign language publications. Replies were divided about equally among those who preferred the alphabetical list, the classified arrangement, or used both. The responses to this questionnaire gave a fairly satisfactory answer to the questions which had arisen regarding the book section, and proved a main factor in the decision to continue this section in its present form.

Although new developments in pharmaceuticals and therapeutics have been a boon to the physician and his patients, they represent anything but a blessing to the editor of an index. The multiplicity of terms—chemical, generic, and trade—for each product complicates the situation to an extent that makes the handling of articles concerning drugs a major problem. Ideally, this could be met by the employment of a person with a chemical background who could assume responsibility for formulating procedure, maintaining authority files, and consulting with the other staff members on the indexing of this material. Such an employee is now in training, and it is anticipated that before long this information may be handled without occupying a disproportionate amount of time of the editor and associate editor.

The personnel situation continues to be the chief hazard in expediting work on the Index. The resignation of the supervisor of proofreading, revising, and typing, who had worked on the Index for over 25 years and carried a heavy load, represented a major loss. Altogether 13 employees left during the report period, some of them after a short term of service, but others with training at least partially completed. There have been some encouraging replacements, but considerable time elapses before full efficiency can be reached in this detailed work.

Standard Nomenclature of Diseases and Operations

Considerable progress has been made in the past year toward completion of the fifth edition of the Standard Nomenclature of Diseases and Operations.

The results of the work of our Standard Nomenclature Committees will be far reaching and will continue to be felt as long as our committees continue to function effectively.

The attention of the medical field has been focused on the need for continued standardization of terminology. At no time since 1928 has so much emphasis been placed on the use of accepted terminology as an aid to education and research in the matter of health.

Physicians, realizing the great need for the use of correct terminology in completing research projects, are installing the Standard Nomenclature in their offices and it is now being used extensively in medical clinics.

The editors are working cooperatively with the poison control group in revision of Category 3. Additional material for review has been submitted by the following committees:

Respiratory
Dentistry
Ophthalmology
Female genital
Urology
Anesthesiology
Dermatology

The correspondence load in the nomenclature office has practically doubled. For the first nine months of the year approximately 4,000 queries have been answered.

The American Medical Association has sponsored and conducted nine Standard Nomenclature Institutes to date—four at headquarters in Chicago, and one each in New York, Atlantic City, N. J., Roanoke, Va., Indianapolis, and San Francisco. Approximately 1,300 students have been given the opportunity to learn elementary anatomy as it pertains to the topography section of the nomenclature and sound principles basic to the nomenclature and methods of installation and maintenance. These institutes are tuition-free and are offered as a service to anyone using or interested in installing the nomenclature. Institutes in the following year are planned for Atlanta, Ga., Tulsa, Okla., and Boston. The teaching is under the direction of the editors.

The editor, in collaboration with the chairman of the cancer section of the American College of Surgeons, prepared an article on the "Use of Standard Nomenclature in a Cancer Clinic"; this article was published in THE JOURNAL of the American Medical Association and approximately 500 copies have been distributed.

The exhibit has been very beneficial in acquainting physicians and lay personnel with the organization of the nomenclature. A new exhibit is being designed under the direction of the Bureau of Exhibits, and will emphasize instruction in the use of the Nomenclature. This exhibit will be shown for the first time in Milwaukee in October, 1957.

The Standard Nomenclature office is working cooperatively with the Bureau of Medical Economic Research on its study of "Totality of Physicians' Service in Hospitals," with the Queries and Minor Notes department in classifying all queries according to Standard Nomenclature, and with the Council on Medical Service in compiling the material for its "Guide for Maternal Death Studies."

A diagnostic file is now maintained in the nomenclature office which includes all articles published in THE JOURNAL of the American Medical Association coded and filed according to Standard Nomenclature, as well as a cross index file according to author.

In addition to the regular committee work, future plans are for a neuropsychiatric meeting the latter part of September, a second supplement to be published within the next six months, and a complete revision of the surgery section, as well as extensive work on Categories 3 and 8.

Today's Health

Today's Health is still operating at a financial loss, but increased circulation, increased advertising, and widespread reprinting and quoting evidence the fact that *Today's Health* is making a real contribution to the American Medical Association and the general public.

Circulation: During the fiscal year ending June 30, 1957, the circulation of *Today's Health* reached its highest point since the founding of the magazine as *Hygeia* in April, 1923. The average net paid monthly circulation was 372,791, with average total monthly distribution standing at 389,999. A comparison of the major classifications of subscribers shows:

Subscriber Classifications	*Percentage of Total Paid Subscriptions*	
	May, 1957	*May, 1956*
Lay Subscribers	66.1%	70.4%
Physicians	16.2	8.1
Teachers and Schools	6.5	7.0
Dentists	3.0	3.7
Registered Nurses	2.0	3.9

The substantial increase in circulation to physicians' reception rooms resulted from the 1956-1957 subscription project conducted by the Woman's Auxiliary to the A. M. A. The national, regional, state, and local auxiliaries produced the highest number of orders ever in the period covered by this report and they will continue their efforts to place an even greater number of subscriptions in the reception rooms of physicians and dentists.

Present plans indicate an average net paid circulation for the next fiscal year of approximately 400,000. Preliminary steps have been taken to explore the possibility of placing copies of *Today's Health* on newsstands in some of the larger communities. Also, a study has been made to determine the possibility of offering a special subscription rate with the premium book "The A. M. A. Book of Health" in certain radio markets controlled by the Columbia Broadcasting System.

Nearly 30,000 teachers and schools regularly subscribed to the magazine during the last fiscal year. Ninety-three high schools and colleges used multiple copies in classroom work under our School Group Study Plan. The Monthly Discussion Topic Questions and Answers, prepared by a team from the A. M. A. Bureau of Health Education, are more popular than ever and provide the teacher with a monthly discussion outline of each issue.

Today's Health was displayed at 14 national conventions this past year where sample copies, promotion circulars, and subscription order forms were distributed to professional and health education leaders. At the same time, industrial and business firms continue to buy subscriptions in volume for their employees.

Editorial: Despite some very obvious financial handicaps and the reluctant rejection of many manuscripts that would have served us well, it has been possible to maintain *Today's Health* editorial content at a high level of acceptance and influence. Confirming this, it is important to note that in the last 12 months *Today's Health* has been reprinted on every continent except South America, in Braille, on long-playing records, and in most of the languages of Europe and Asia. The magazine has also been quoted by the "Voice of America" in the native tongue of every major nation of the globe.

Articles were reprinted in Britain, Canada, Australia, China, Russia (U. S. Information Agency), France, Germany, Portugal, Greece, and South Africa, where a magazine used 28 *Today's Health* articles and a newspaper syndicate, 14. They were picked up by 9 Braille publications and one "talking magazine," 18 house organs representing General Electric, Continental Oil, banks, phone, gas and power companies, and other manufacturers; Air Force, Civil Defense, and the Department of Health, Education, and Welfare, in addition to the U. S. Information Agency, which placed eight paid articles in foreign periodicals; health, welfare, and education agencies of nine states; 17 voluntary health agencies, 9 hospitals, and 9 trade journals, including 4 dealing with problems of management and others covering subjects ranging from cosmetics to automobile traffic.

Totals, showing an acceleration of the rise indicated in the preceding 12 months when 202 *Today's Health* articles were reprinted in 143 publications, were 267 articles, 11 cartoons, and 2 poems reprinted in 267 different publications. Professional organizations whose official publications reprinted *Today's Health* articles include the American Dental Association, National Association of Housing and Redevelopment Officers, American Association of Industrial Nurses, Health Officers' Association, and Police Officers' Association. This, with the frequent appearance of *Today's Health* articles in the *Reader's Digest*, clearly multiplies its influence far beyond the 7 million readers who are reached directly each month.

Today's Health has ventured on a bit of crusading with what seems an incredible uniformity of favorable reaction. A juvenile court officer's article last December, "We're Misleading Our Teen-Agers About Love"—on the thesis that song writers, magazine publishers, and other adults are, in current phrase, acting like "crazy, mixed-up kids" about the meaning of the word—was widely quoted and reprinted by educators and others dealing with parents and children.

"The Suicidal Cult of Manliness" (December), was quoted the country over. "How Poor Housing Kills Children" (April), a pediatrician's account of lead poisoning from crumbling plaster and paint and the battery cases that, until recently, were a common slum fuel, was reprinted in full in the *Journal of Housing*. "Let's Quit Exploiting Children's Sports" (May), was widely quoted, debated on television panels, reprinted by several California newspapers, and, almost in full, with favorable mention of the magazine and the Association, on the editorial page of the powerful St. Louis *Post Dispatch*.

While *Today's Health* as a whole represents an effective public relations instrument, an honest and obvious service to the public, an effort has been made to include in each issue direct contribution to the public understanding of the profession and of organized medicine in particular.

The March issue was going to press, for example, when the Secretary's Letter reported the Association's leadership in the drive for poliomyelitis vaccination. This issue not only carried an editorial by the President of the Association but an article on poliomyelitis with prominent "box" on the Association's initiative in the drive. Other examples are, from March, "The Finest Diagnostic Instrument" ("the trained clinical judgment of your physician"), the moving letter entitled "Our Baby's Life," and regular articles by Lentz, Radcliff, De Kruif, and others on various fields of medicine.

A 320-page *Today's Health* anthology, 58 of our finest articles made available in soft covers for 35 cents to mass readers, has been published as a Dell First Edition. The closing of one of the largest distributors has so confused the paperback market that we have not yet had a royalty report, but reviews and fan mail indicate the book is meeting an enthusiastic reception.

Early last fall (1956) a study was made by the A. M. A. Director of Public Relations and our Chief Editor to determine the impact of the magazine itself on its 7 million readers every month. Responses from voluntary, local, state, and national health agencies, department heads in 351 high schools with 3,521 teachers in charge of 165,000 students, and 153 school physicians supervising 8,073 professional persons in charge of 4,389,000 students showed that 70 to 90% use *Today's Health* for habitual reference, 68 to 80% as recommended reading and, in projects directed to the general public, 20 to 80% used it as source material for radio, television, articles, and bulletins.

Advertising: *Today's Health* is very proud of the advertising sales record that has been compiled in the 12 months covered by this report. In fact, during the first six months of 1957 it showed a 52% gain in lineage over the same 1956 period. Thirty-three new accounts have been established—among them Kraft Foods, Bristol-Myers, Pepsi-Cola, Quaker Oats, and General Foods.

Last year it was reported that inadequate sales representation was the cause of the small amount of advertising carried in the magazine. In August, 1956, an experienced sales manager was employed for the New York office and shortly thereafter a second full-time representative was added to the Chicago office staff. These two men have helped immeasurably, and *Today's Health* is now in a position to consider further additions to the staff as the demand warrants.

General: From an over-all administrative standpoint, *Today's Health* operated these past 12 months on a reasonably tight cost control basis. All budgets have been held to the minimum, printing and paper costs continue to increase. To compensate for the increase in the cost of paper, *Today's Health* is now printed on a lighter-weight stock and every effort is being made to hold printing costs as low as possible.

Following the completion of a *Today's Health* organization study by Prof. Floyd Arpan of Northwestern University last fall, the Managing Publisher recommended to the Board of Trustees that the magazine be established as a separate entity within the operational framework of the Association. The "Today's Health Five Year Plan" also called for a full-time editor, a reorganization of *Today's Health* Advertising Department, development of a Production Department, introduction of basic research to determine the exact objective of the magazine, and introduction of a uniform system of publication cost accounting. It was also suggested that a separate Advertising Review Committee be appointed for *Today's Health*. Shortly after the closing date of this report (June 30, 1957) the Board of Trustees approved the over-all recommendation and it is now in the process of being implemented.

Library

Possibly due to the publicity given to the Package Library Service by an exhibit in the Library during the 1956 A. M. A. convention in Chicago, and by an item in THE JOURNAL of Nov. 10, 1956, the total number of packages prepared increased to 2,037, about 200 more than last year. This trend continued, more requests being received in the first half of the current year than in the second half of 1956. They came from every state and from the District of Columbia, the largest number from population centers such as Illinois, New York, Ohio, and Pennsylvania. However, since this service was originally intended to help physicians in thinly populated areas where there are few local medical libraries, it was encouraging that such states as Arizona, Wyoming, Montana, and Nevada were well represented.

In addition to preparing package libraries, the staff has answered about 500 inquiries which required a search of the literature, compiling bibliographies, and detailed reference work. It is impractical to keep a record of the many questions handled by telephone and of the requests from other departments which are answered daily.

A growth of interest in new techniques and drugs has been especially noticeable in the past year, often stimulated by stories which appear in the lay press long before reports are printed in the medical literature. The presentation at a meeting of two papers on Raynaud's disease in women, a report on a virus causing multiple sclerosis, and a new injection method for treating low back pain have evoked numerous inquiries. There have been an unusual number of letters from pathologists and radiologists, most of them on specific techniques. The Library gratefully acknowledges the assistance of other A. M. A. departments and of local libraries in handling some of the inquiries.

The Periodical Lending Service fell off slightly this year, with 10,278 periodical loans recorded, 3,667 sent in package libraries. Loans to department or personnel at headquarters numbered 2,111, and the rest were borrowed by A. M. A. members or by subscribers.

A six-month check of requests indicated that 55 were for single titles which are not on file here. A number of these were publications in paramedical fields, others obscure journals which it would not pay to keep for an occasional need. Because the periodical files cover only the preceding 10 years, the unmet demand for older journals was also recorded for the same six-month period. The library received 21 requests for periodicals dated in the 1800's; 60 for those published in the 1930's; 37 for the period from 1940-1945; 13 for 1946 and 6 for 1947. Since these requests involved only 137 items scattered over a number of years, the policy of maintaining a current collection still seems sound.

The records show that 287 books were catalogued during the year. As usual, a number of additional periodicals were received, among them exchange copies of Russian publications and translations of some of them.

Routinely, indexes to the three volumes of The Journal of the American Medical Association were prepared in the Library. The problems which arose from printing of The Journal by a commercial firm have been adjusted and a satisfactory schedule arranged.

Law Department

This report covers the activities of the Law Department from July 1, 1956, to June 30, 1957. As it has since it was established in August, 1954, the Department continues to operate as the coordinating agency for the legal activities of the Association and, in addition, expanded its interest and work in the field of forensic medicine.

The Department provided staff assistance and worked closely with the Judicial Council, the Committee on Legislation, the Council on Constitution and Bylaws, and the Committee on Medicolegal Problems. Separate annual reports will be submitted by each of these councils and committees outlining their activities. The Director of the Law Department would, however, like to express his gratitude to the Chairman and members of each for their cooperation and the pleasant working relationship which has prevailed.

Under the direction of the Secretary and General Manager the Department has acted as legal advisor to the Board of Trustees, the House of Delegates, the officers and executive staff of the Association. This work has involved a variety of legal questions including antitrust law, contracts, taxes, leases, copyrights, trademarks, libel, slander, and insurance.

With the assistance of outside legal counsel the Department provided advice to the Association in these matters and in handling five court cases to which the American Medical Association was a party.

Liaison Activities

Interassociation Work: The attorneys on the staff of the Department have maintained liaison with one or more of the permanent councils and committees by attending meetings, assisting in the answering of correspondence, reviewing prospective programs and by giving oral and written legal advice, on request, to the council or committee members and staffs. In addition, members of the staff have attended meetings and have provided legal and, on occasion, administrative assistance to the numerous temporary committees and subcommittees of the Association.

National Organizations: One of the most gratifying developments during the year was the establishment of a closer and more effective liaison with the American Bar Association. In August, 1956, at the annual meeting of the A. B. A., the Law Department and the Committee on Medicolegal Problems assisted in the presentation of a half-day program dealing with the scientific validity of chemical tests for intoxication and the introduction of the results of such tests in court in a "drunken driving case." At a regional meeting of the A. B. A. in Baltimore in October, 1956, the Department presented a panel program on Impartial Medical Testimony. At the annual and mid-winter meetings of the two Associations since December, 1956, either the President or President-elect of each Association has been present to address the other organization's House of Delegates and to participate in other ways in the program.

Within the past four months a joint national liaison committee, with representatives from the A. M. A. and the A. B. A., has been appointed. The organizational meeting of the Committee was held in New York in June, 1957, at which time the Committee announced as its first project the preparation of a National Code of Understanding Between Physicians and Attorneys.

In addition to its work with the American Bar Association, the Department has presented or assisted in presenting talks or programs on one or more medical legal subjects at meetings of:

The American Academy of Forensic Sciences
The American Academy of Obstetrics and Gynecology
The American Academy of Orthopedic Surgeons
American Society of Medical Technologists
American Hospital Association
American Nurses Association
Junior Bar Conference
Association of American Railroads
American Academy of Radiology

Medical Societies and Individual Physicians: The Department has, through correspondence and personal visits, maintained active contact with the executive secretaries and the legal counsel for state and county medical societies. Representatives of the Department have, on request, spoken or presented programs on medical legal subjects, on at least 50 occasions, at state and local medical meetings and at joint medicolegal conferences. The staff of the Department has also shown and explained exhibits on Medical Professional Liability and The Drunken Driver at state and county medical meetings.

The Department has begun necessary preparations for its second national conference for attorneys and executive secretaries of state and county medical societies to be held in Chicago in March or April, 1958.

Although a statistical record has not been kept of the number of letters received and answered, there is no doubt that several thousand were received during the period of this report. These letters from individual physicians, attorneys, medical societies, and outside organizations deal with a wide variety of problems in the medical-legal field.

Preparation or Review of Published Material

The most significant contribution of the Department in this regard was the series of 14 articles on various aspects of medical professional liability, which was published in The Journal and which will be discussed later in this report. In addition to preparing numerous book reviews and editorials, the Department assisted in reviewing material submitted from other sources and contributed the following original articles:

Right of Staff-Member to Treat Patients in Public Hospitals
Blood Transfusions—Medical-Legal Responsibilities
Blood Transfusions—Jehovah Witness
Opinions of the Judicial Council
Blood Tests for Intoxication Upheld by the United States Supreme Court

Medicolegal Symposiums

The Department, in cooperation with the Committee on Medicolegal Problems, presented its second series of three regional medicolegal symposiums in March, 1957. More than 1,000 doctors and attorneys from 44 states attended the meetings, which were held in Atlanta, Ga., March 15-16; Denver, March 22-23; and Philadelphia, March 29-30.

Each symposium was devoted to the same three general topics, which were:

Regional Medicolegal Conferences

In cooperation with the Law Department, the Committee assisted actively in the conduct of the second series of regional medicolegal conferences, which were held in Atlanta, Ga., Denver, and Philadelphia in March, 1957. These meetings are discussed in detail in the annual report of the Law Department. Dr. Alan R. Moritz of Cleveland, Chairman of the Committee, acted as moderator of the panel which discussed trauma and cancer at the Denver meeting; Dr. Herman A. Heise of Milwaukee, presented a talk and participated in a mock trial demonstration on chemical tests for intoxication at all three meetings, and Mr. C. Joseph Stetler acted as chairman at each of the sessions.

Medical Professional Liability

A special subcommittee under the chairmanship of Dr. Joseph F. Sadusk Jr. of Oakland, Calif., was appointed to work with the Law Department in the medical professional liability survey; to revise the publications of the Committee in this field; and to assist in the preparation of script material for the professional liability films to be produced jointly by the A. M. A. and the American Bar Association.

The Committee cooperated actively with the Council on Medical Service and the Law Department in conducting a complete and thorough survey of medical professional liability. Two of the members of the Committee contributed original articles which were published in The Journal. One by J. W. Holloway Jr., entitled "Put It in Writing, Doctor!" was published on Feb. 23, 1957, and another entitled "Hazardous Fields of Medicine in Relation to Professional Liability," by Dr. Joseph F. Sadusk Jr., appeared in the March 16, 1957, issue of The Journal.

Chemical Tests for Intoxication

Considerable emphasis was placed on the subject of chemical tests for intoxication during the past year. The Committee, through Dr. Heise and with the cooperation of the Law Department, prepared the script for a mock trial demonstration to illustrate the proper method of qualifying an expert witness and introducing the results of chemical tests for intoxication in a "drunk driving case." The demonstration was presented on five occasions in Atlanta, Ga., Denver, Philadelphia, Chicago, and New York. At each of these meetings, Dr. Heise presented an introductory talk outlining the scientific background for the various chemical tests, and reviewed the degree of acceptance of the tests by the medical and legal professions and by the public. The Committee is indebted to Capt. Robert F. Borkenstein of the Indiana State Police, the inventor of one of the breath-testing devices, who participated in the mock trial demonstration each time it was presented. The Committee, through Dr. Heise, also assisted in the presentation of the mock trial demonstration at the meeting of the American Bar Association in August, 1956, in Dallas, Texas, and at the scientific session of the American Medical Association in New York City in June, 1957.

Work has been completed on a series of articles and a manual on chemical tests for intoxication. The articles which have been submitted by various authors will be published in The Journal and will then be distributed in booklet form.

Medicolegal Applications of Blood Grouping Tests

A final report has been prepared and approved by the Committee concerning the medicolegal applications of blood grouping tests. This report, which includes a discussion of the nomenclature of the Rh-Hr types, a description of certain recently discovered blood factors, the use of blood tests as substantial evidence of paternity, as well as the exclusion of paternity, and a model blood test law appeared in the Aug. 31, 1957, issue of The Journal as a special report of the Committee.

Medicolegal Film Project

Together with the Law Department, the Committee has assisted in the preparation of story outlines and scripts and has supplied technical advice in the production of two films. The first, entitled "The Medical Witness," is concerned with the proper method of presenting medical testimony in a personal injury case. The second, entitled "The Doctor Defendant," deals with the subject of medical professional liability.

These two films, which were previewed during the period of this report, are a part of a series of six medicolegal films being prepared jointly by the American Medical Association and the American Bar Association with the financial assistance of the Wm. S. Merrill Company, drug manufacturers, of Cincinnati. Work has already been started on the next two films, which will deal with forensic psychiatry.

Coroner-Medical Examiner Systems

The Committee has continued its work during the year in support of the Model Post-Mortem Examinations Act as approved by the National Conference of Commissioners on Uniform State Laws.

Distribution of Pamphlets

The Committee continued the distribution of several leaflets and pamphlets by its subcommittees. During this period, 12,285 copies of a leaflet entitled "Test Your A.Q. (Alcohol Quotient)—20 Questions on Alcohol" were distributed. The Committee also continued its cooperative arrangement with the medical schools and distributed approximately 3,500 copies of the pamphlet entitled "Malpractice and the Physician" to graduating medical students. In addition, 400 copies of this pamphlet were distributed to individual physicians on request. Five hundred requests were filled for the pamphlet "Medicolegal Aspects of Blood Transfusions" and the 1952 report of the Committee dealing with the "Medicolegal Applications of Blood Grouping Tests."

Exhibits on Professional Liability and Chemical Tests for Intoxication

The Committee assisted in the presentation and explanation of the exhibits on chemical tests for intoxication and medical professional liability. These exhibits were shown on 20 occasions.

Conclusion

The chairman, members, and staff of the Committee would like to express their appreciation to the Board of Trustees, officers, and members of the House of Delegates for the cooperation and consideration that have been received in carrying out the assignments of the Committee.

Committee on Legislation

This report covers the period from Sept. 1, 1956, to Aug. 31, 1957. It is necessary to include the months of July and August in order to cover the complete activities of the First Session of the 85th Congress which recessed on Aug. 30, 1957.

During this period there have been several changes in the composition of the Committee. On Feb. 8, 1957, the Board of Trustees reorganized the Committee on Legislation providing for one-year appointments for the members and a new distribution of states. At its meeting during the Annual Session in New York, the Board of Trustees appointed Dr. F. J. L. Blasingame as temporary Chairman to succeed Dr. Reuling. At its meeting on July 20-21, 1957, the Board appointed Dr. George M. Fister as the new Chairman of the Committee on Legislation. Warren E. Whyte was employed as the Executive Secretary of the Committee on Nov. 5, 1956. The composition of the Committee at present is:

George M. Fister, M.D., Chairman
McKinnie L. Phelps, M.D., Vice Chairman
C. Byron Blaisdell, M.D.
R. B. Chrisman, Jr., M.D.
Frank C. Coleman, M.D.
Harlan English, M.D.
Frank J. Holroyd, M.D.
J. Lafe Ludwig, M.D.
John E. McDonald, M.D.
D. Olan Meeker, M.D.
George E. Twente, M.D.

During the period covered by this report, the Committee has met on four occasions: on Oct. 14, 1956, in Chicago; on Feb. 2, 1957, in Chicago; on March 30, 1957, in Washington, D. C.; and on Aug. 24, 1957, in Chicago. All important legislation of medical interest introduced in the First Session of the 85th Congress was considered, Association policies and legislative activities were reviewed, and appropriate recommendations were submitted to the Board of Trustees.

State Legislative Key Man Organization

At its meeting on Oct. 14, 1956, the Committee discussed the formation of a revised state legislative key man organization. A subcommittee, appointed to study and make recommendations for a new program, presented a report which was approved by the full Committee and the Board of Trustees. Subsequently, nominations for a state "key man" were obtained by the Committee members from each of the state medical societies. These nominations were submitted to the Board and legislative key men were appointed in each of the 48 states. Alternate legislative key men were also appointed in Colorado, New Mexico, Arizona, Montana, Utah, Wyoming, New Jersey, and Texas.

The purpose of having a physician nominated by each state society and formally appointed by the Board of Trustees of the Association was to give that individual official status as the A. M. A. federal legislative representative in his state. Under the new organization, communications on legislative matters are transmitted, through the appropriate member of the Committee on Legislation, to the legislative key man in each state who is responsible for action in that state on legislative matters of a federal nature. Thus, a personal relationship between the key man and the Legislative Committee member is developed and a more effective chain of communication is established.

The Committee member assigned to each area will at some time during each year either hold a meeting of his state key men or visit them individually. Meetings of the key men and the members of the Committee will also be held periodically at the Annual and Clinical Sessions of the Association. A meeting of this nature was held at the Annual Session in New York in June, 1957.

Due to the small number of medical measures considered by Congress during this session, it was only necessary on one occasion to call on the key men as a group for legislative action. This was in connection with the Jenkins-Keogh bills, which will be discussed below.

Cooperation with Legislative Organization of Woman's Auxiliary

At its meeting on Feb. 2, 1957, the Committee voted to extend an invitation to the Chairman of the Committee on Legislation of the Woman's Auxiliary to attend meetings of the A. M. A. Committee on Legislation. Close communication has been developed between Mrs. Goodhand, the present Chairman of the Committee on Legislation of the Woman's Auxiliary, and the Committee, so that the Auxiliary is fully informed on all our activities and is in constant readiness to cooperate. During the year the Woman's Auxiliary appointed legislative area chairmen with the same geographical responsibilities as the members of the Committee on Legislation. In addition, state legislative key women have been appointed in almost every state.

First Session, 85th Congress

During the First Session of the 85th Congress, a large number of bills of medical interest were introduced. Up until the 17th of May, when the last compilation was made, 361 bills of a medical nature had been introduced. Just as the bills of a medical nature introduced in the 84th Congress (571) showed a 40% increase over those introduced in the 83rd Congress, all indications are that there will be a substantial increase in the number of medical bills introduced in the 85th Congress. Despite the number of bills introduced, final action was taken by the Congress on only a few proposals. Hearings were held during the First Session on several important subjects, but it is apparent, as usual, that intensive activity and final action on medical bills will be reserved for the Second Session.

Social Security Amendments

A great number of the bills of medical interest introduced during this Session were proposed amendments to the Social Security Act. The more important of these would liberalize the disability benefits enacted into law during the 84th Congress; include physicians under the Old-Age and Survivors Insurance Program; and provide hospitalization for certain OASI beneficiaries. In general, the Committee took a position of opposition to amending the disability provisions of the Act for the same reasons that it opposed the disability amendment itself during the last Congress. Opposition to compulsory coverage of physicians was also voted by the Committee in accordance with the policy adopted by the House of Delegates and no action was taken with respect to voluntary coverage.

Undoubtedly, the most important legislative problem facing the American Medical Association during the 85th Congress will be the bills proposing free hospitalization and related medical care to beneficiaries, under the Old-Age, Survivors and Disability Insurance provisions of the Social Security Act, who are 65 years of age and over. Indications are that this proposal will be very strongly pushed during the Second Session and that an all-out effort will be necessary in order to defeat it. The Committee on Legislation discussed this problem at length at its meeting on Aug. 24, 1957. On the Committee's recommendation, a Task Force, under the Chairmanship of Dr. Fister, has been appointed by the Board to direct and supervise the necessary research and investigation.

At the Annual Meeting in New York, the House of Delegates voted to approve a stepped-up informational program by the Association directed to all of its members explaining the Association's position of opposition to compulsory coverage of physicians under OASI. A program of this type has long been advocated by the Committee because of its belief that the majority of physicians in this country are not well informed on the basic issues involved in compulsory Social Security coverage.

"Doctor-Draft" Act

On June 30, 1957, the "Doctor-Draft" act expired. A bill, H.R. 6548, had been previously introduced to place physicians and allied medical personnel under the regular provisions of the Universal Military Training and Service Act. On May 8, 1957, Dr. Harold S. Diehl testified before the Committee on Armed Services of the House of Representatives concerning the Association's position on the drafting of physicians. The Association's opposition to the "Doctor-Draft" act was reiterated, and H.R. 6548 was endorsed as a suitable measure to insure a sufficient supply of physicians for the armed services. This testimony was also presented by Dr. Diehl before the Committee on Armed Services of the Senate on June 6, 1957. H.R. 6548 was enacted into law on June 27, 1957, as Public Law 85-62. Thus, the discriminatory and long opposed "Doctor-Draft" act has expired and physicians will now be registered and drafted into the armed services in substantially the same manner as other citizens.

Veterans' Affairs

Numerous bills concerning veterans' affairs were considered by the Committee during the year. A position of opposition was adopted by the Association on the many bills providing for a presumption of service-connection for various diseases and conditions. Two bills, providing for appointment of chiropractors by the Veterans Administration, were also opposed.

H.R. 58, a bill imposing additional requirements of disclosure of financial information by veterans seeking hospitalization in Veterans Administration hospitals, for non-service-connected diseases or disabilities, was actively supported by the Association. Dr. Edwin S. Hamilton and Dr. Russell B. Roth testified on March 5, 1957, concerning this bill before the Committee on Veterans' Affairs of the House of Representatives. The Association's position on other aspects of the Veteran's Administration's medical care program was also reviewed in a lengthy question-and-answer session. It was generally agreed that this was the most fruitful appearance that the Association has made before this particular Committee. Although H.R. 58 was not enacted during the First Session, administrative regulations were promulgated by the Veterans Administration which accomplished, in part, the ends sought by this bill.

On July 20, 1957, telegrams were sent by the Association to a few key members of the House of Representatives concerning H.R. 6719, a bill providing, among other things, for a pay raise for medical personnel in the Veterans Administration. It was pointed out that the bill placed optometrists in the same category as physicians and dentists. The Association urged the leaders of the House to oppose the enactment of this provision. Although the Committee on Veterans' Affairs reported the bill favorably, no further action has been taken.

Tax Deferment for the Self-employed—Jenkins-Keogh Bills

During this year the Association continued its active support of the Jenkins-Keogh bills. In January, 1957, an organization was formed solely for the purpose of securing the enactment of this legislation. This organization, later named the American Thrift Assembly, is sponsored by many of the national organizations representing self-employed persons, such as the American Bar Association, the American Dental Association, the American Institute of Accountants, and the American Medical Association. A national campaign was organized to encourage Congress to act on the Jenkins-Keogh bills. The members of the Committee on Legislation and the state legislative key men took part in the formulation of organizations in every state and in every Congressional District to stimulate grass roots support for these bills. In addition to contributing financial aid to the American Thrift Assembly, the American Medical Association has cooperated in every way with this organization to the fullest extent. From all indications, the success of the Jenkins-Keogh bills is still in doubt; however, commitments have been made by the House Ways and Means Committee to hold hearings on the bill in January, 1958, and to take some definitive action during the Second Session of the 85th Congress.

The Bricker Amendment

Little action was taken on this proposed Constitutional Amendment during the First Session of the 85th Congress, and it now appears that there is little likelihood of its being enacted any time in the near future. Hearings were held by the Senate Subcommittee on Constitutional Amendments, and on June 25, 1957, the Association sent a letter to the chairman expressing active support of the principle of the pending resolutions.

Military Medical Affairs

During the year, the Association cooperated with the various state medical societies and with the Department of the Army (which is administering the Dependents' Medical Care Act) in preparing regulations and necessary contracts for the administration of the Medicare Program throughout the country.

This program began operation on Jan. 7, 1957, and from all reports it is, for the most part, proceeding to the satisfaction of both the military and the medical profession. However, in the hearings before the House Subcommittee on the Department of the Navy Appropriations, statements were made by representatives of the Navy Department to the effect that the cost of medical care for military dependents was much higher in civilian facilities than in military medical establishments. Acting on these representations, the House Committee on Appropriations in its report recommended that the free choice of physicians under the program be curtailed so as not to permit military dependents to utilize civilian medical and hospital services unless it is determined that the military facilities are inadequate.

A letter was written by the Association on May 27, 1957, to the Committee on Appropriations of the Senate questioning the accuracy of the cost statements of representatives of the Navy and questioning the recommendation of the House Committee regarding the free choice element. On June 19, 1957, Dr. Hugh H. Hussey testified before the Subcommittee on Defense Appropriations of the Senate on this matter, pointing out that the Medicare program had been in operation for such a short time that it was impossible for anyone to accurately state its relative costs and further pointing out that there was no reason to believe that civilian medical care was any more expensive than care in the military facilities. The funds deleted from the Navy appropriation for the purposes of dependent medical care were restored by the Senate Committee and the recommendation of the House Committee that free choice be curtailed was not adopted by the Senate.

Several bills were introduced in this session to amend the Dependents' Medical Care Act, so as to extend its coverage. The Committee opposed these bills because it felt that there is not sufficient experience under this Act in order to intelligently amend its provisions.

Amendments to the Hill-Burton Act

Numerous bills providing for amendments and extension of the Hill-Burton Act were considered by the Committee on Legislation during this period. All action on these bills was deferred pending the completion of a comprehensive study of the Hill-Burton program by the Council on Medical Service.

Amendments to the Internal Revenue Act

A great many bills were introduced in Congress and considered by the Committee having to do with deductions for various medical purposes under the income tax provisions of the Internal Revenue Act. The Committee deferred action on these bills pending a study by the Association of the effect of the bills on the Internal Revenue Act and their relative merit.

Health Insurance

Several bills having to do with the various aspects of health insurance were considered by the Committee during this period. The Association adopted a position of opposition to bills which would prohibit insurance companies from canceling health policies after a period of three years. It was felt that the regulating of insurance policies was a proper matter for the individual state governments.

The most important legislation in this field dealt with the establishment of a health insurance program for federal employees. The Committee studied these bills, including H.R. 7034, supported by the American Hospital Association and the Blue Cross, and S. 2339, proposed by the administration. Although the Association has in the past expressed its approval of the concept of federal employees contributing to their health insurance programs, no definite position has been taken as yet on the pending bills. The Committee on Legislation feels that before a position on the bills is recommended it will need further advice from the Committee on Prepayment Medical and Hospital Service of the Council on Medical Service.

Establishment of a Department of Civil Defense

During the First Session of Congress several proposals were introduced suggesting the establishment of a Department of Civil Defense in the federal government. The Association reaffirmed the policy of the House of Delegates to the effect that the form a federal agency having to do with civil defense should take was a matter for Congress to decide. The Association requested only that the health department of any federal civil defense agency be elevated to a status commensurate with its obligations and responsibilities. On March 7, 1957, Dr. Hugh H. Hussey and Dr. Harold C. Lueth, Chairman of the Committee on Civil Defense of the Council on National Defense, testified before the Subcommittee on Military Operations of the House of Representatives on H.R. 2125, a bill to establish a separate Department of Civil Defense. The witnesses urged the Committee to strengthen the federal civil defense program and to establish a suitable health division with sufficient status to fulfill its obligations. Specific recommendations were also made concerning health and medical preparedness measures under any civil defense enactment. No final action was taken on a civil defense bill during the First Session of the 85th Congress.

Other Important Legislative Matters

During this period the Committee on Legislation considered numerous other important legislative matters. Among these were the establishment of an office of Civil Aviation Medicine within the Civil Aeronautics Administration and a bill to amend the Federal Regulation of Lobbying Act.

On July 1, 1957, a letter was sent by the Association to the Senate Committee on Government Operations concerning S. 2191, a bill proposing a new Legislative Activities Disclosure Act. This bill would repeal the present Federal Regulation of Lobbying Act and would correct many of its obscurities and inequities. In the letter to the Committee, the Association commended the Senate Committee for attempting to clarify the present confused lobbying situation and also recommended that the Act be restricted somewhat in scope so as not to require state and county medical societies engaging in lobbying activities to register and keep records under the proposed act.

Conclusion

In closing its report, the Committee wishes to express its appreciation to the Board of Trustees, the Washington Office, the Woman's Auxiliary, and to the officers and staff of the Association, as well as to the state medical societies, for their cooperation and assistance during the period covered by this report. We particularly wish to acknowledge the significant contribution of the state legislative key men and the physicians in the various states who took part in federal legislative matters during this period.

Washington Office

The first session of the 85th Congress adjourned with few major health bills enacted, but the record number introduced is evidence that next year will see intense legislative activity in all health and welfare fields.

Before the session closed, senators and representatives had proposed approximately 450 health and welfare bills which after careful screening were considered to be important enough to be followed in detail by the Washington Office. This compares with a total of 571 health-welfare bills introduced in both years of the previous Congress.

As in other first sessions, Washington Office personnel concentrated on developing contacts among congressional leaders, committee members, and committee staffs, so as to bring about a climate of cooperation by the time Congress gets down to the actual business of passing new laws next session. New members of the Congress were personally visited by members of the staff. At the same time work was intensified with executive departments and agencies that are administering laws already enacted. This spring an additional physician was added to the staff to provide better coverage with members of the House. Previously, one staff physician had been responsible for contacts with the 435 representatives.

During the course of this first session, American Medical Association witnesses testified on eight separate occasions before Senate or House committees, advising the lawmakers on such varied subjects as veterans' hospitals, civil defense, the "Doctor-Draft" extension, Medicare appropriations, and the effectiveness of cigarette filters. Such witnesses have been briefed on latest developments and committee attitudes prior to their appearances.

In addition, letters were sent to committees giving them the Association's views on a number of pending bills.

Members of the A. M. A. Washington Office staff attended hearings on all bills of any importance to medicine, even when the Association did not testify. It takes approximately half the time of four staff members to cover such hearings. Some of the subjects: union welfare funds, vocational rehabilitation act, barbiturate control, codification of Veterans Administration benefit laws, hospitals for Indians and non-Indians, food additives, and changes in the Civil Defense Act.

Not all activity of the Washington Office staff is legislative, nor is it always reflected in official records. Some examples this year of several types of operations:

The Veterans Administration was concerned in several instances. In one case a group of Oklahoma physicians had testified before the House Veterans Affairs Committee on abuses in VA admission practices, particularly the care in VA hospitals of non-service-connected cases where the patient was entitled to private care under workmen's compensation protection.

The Council on Medical Service was consulted on the problem and a conference was held with the VA in Washington. Participants included Dr. Joseph D. McCarthy, Chairman of the Council, and members of the Chicago and Washington staffs. Following this conference, Washington Office personnel, through meetings with members of the Veterans Affairs Committee, Veterans Administration, Bureau of the Budget, Department of Justice, and General Accounting Office, succeeded in inducing the VA to modify its policy on compensation cases. The change took the form of a directive to VA hospital officials to scrutinize compensation cases more closely.

After a closed hearing, the House Appropriations Committee wrote into its report on Medicare's budget a recommendation that the right of "free choice of physician" be limited by requiring that dependents use military hospitals when there is space available. The committee was motivated by economy, but it based its action on erroneous information supplied by military witnesses.

When they learned of the recommendation, representatives of the Washington Office, with the cooperation and assistance of Chicago headquarters, set about to have the damage repaired. A number of representatives were supplied the facts —which contradicted the Appropriations Committee's view that care in military hospitals is far cheaper than in civilian. These representatives then took the floor of the House when the funds bill was up for a vote and set the record straight.

Also, an official letter from A. M. A. Secretary George F. Lull was delivered personally to members of the Senate Appropriations Committee, pointing out that cost figures in the House report were in error, and a number of other senators were contacted personally. Finally, Dr. Hugh Hussey of the Board testified before the Senate committee. As a consequence, the Senate committee ignored the House recommendations in making its report.

The Small Business Administration, preparing to make loans for medical facilities and equipment, first considered regulations that would make group practice clinics eligible but not private physicians. A meeting of Dr. David Allman and representatives of the Washington Office with the SBA induced the agency to include both types of practice when eligibility was established.

provided news and research service to television newsmen and helped arrange appearances of A. M. A. representatives, for both local and network shows. Examples of the latter were the panel discussion of medical care costs on the NBC "Home" program and the appearance of a Bureau of Investigation staff member on the Garry Moore show.

Motion Pictures

Hollywood Films: Working with the medical directors and producers of the major studios in the Los Angeles area, the Physicians Advisory Committee on Television, Radio and Motion Pictures checked medical material in seven full-length pictures and one short feature.

PR Films: Three 16-mm. films distributed to school, church, and club groups had the following audiences: "Your Doctor," 369,000 people at 3,456 showings; "A Life to Save," 80,000 at 1,152 showings, and "Operation Herbert," 48,000 at 588 showings.

Membership Film: "The Case of the Doubting Doctor," a 27-minute film showing how the A. M. A. serves the medical profession, was premiered at the 1956 Public Relations Institute and promoted extensively during the period of this report. It was shown to hundreds of state and county medical societies and other medical audiences.

Coordination: The department coordinated promotion and publicity for two medicolegal films, "The Medical Witness" and "Doctor Defendant," produced by an outside organization in cooperation with the Association's Law Department. The department director served on the film advisory committee for the Health News Institute, a public relations arm of the drug manufacturing industry, and in that capacity was able to represent the view of the profession.

Literature Distribution

The department distributed a total of 857,961 pamphlets, booklets, leaflets, brochures, and reprints. Major new public relations pieces were "Your Family Health Record," 1 million copies of which were printed for distribution through state medical societies, and "A. M. A. in Action," an up-to-date booklet describing the activities and services of the Association. Distribution of these two new pieces was just getting under way toward the end of the period of this report.

Other New Pieces: Pamphlet reprints were made of "Freedom in Medical Practice," Dr. Murray's presidential address to the House of Delegates at the Seattle Clinical Meeting; "The Personality of Medicine," Dr. Allman's inaugural address at the New York Annual Meeting; and "The Trojan Horse," Dr. Orr's address on the expansion of the Veterans Administration medical care program. The department also cooperated in the revision and distribution of "What Everyone Should Know About Doctors," a 16-page booklet describing the background, practice, and methods of the modern physician.

Leading Items: Among the pieces with the highest distribution were: "To All My Patients," 428,300; "Your Family Health Record," 170,300; "Quack!" 35,300; "What's up with Our Medical Schools," 29,800; "Health Today," 25,000; "What Everyone Should Know About Doctors," 21,900, and "Mechanical Quackery," 21,500.

Special Projects

Medical Education Week: The department again handled the Association's participation in Medical Education Week, which was observed nationally from April 21 to 27 under the sponsorship of the A. M. A., Student American Medical Association, Woman's Auxiliary to the A. M. A., Association of American Medical Colleges, American Medical Education Foundation, and National Fund for Medical Education. In addition to its work on the national coordinating committee, the department prepared and distributed almost 2,000 promotional kits to state and county medical society secretaries and public relations chairmen, an increase of 100% over 1956. The kits included radio-television scripts, fact sheets, proclamations, speeches, editorials, Woman's Auxiliary plans, radio-television spot announcements, newspaper fillers, tips on community promotions, endorsements by President Eisenhower and the Advertising Council, and lists of local contacts. As a further local aid, three television film clips and a slide were sent to 471 television stations. Latest returns, from 138 stations, showed that 133 of them used all or part of the packets, with most of the films getting repeat showings. Medical societies in 32 states reported that they conducted local observances. The department obtained additional national promotion through science writers; medical, surgical, and popular publications; Journal advertisers; health columnists, and 17 national advertisers.

National Science Fair: For the second year the department also handled the Association's participation in the National Science Fair, held May 9-11 in Los Angeles under sponsorship of the Science Clubs of America. As in 1956, a special panel of A. M. A. judges selected four outstanding exhibits in the basic medical sciences, and the two top winners were guests at the New York Annual Meeting. An innovation this year was a medical awards banquet given by the A. M. A. for the 550 fair exhibitors and their high school advisors. The banquet won favorable coverage by Los Angeles newspapers and wire services. In New York the two guest exhibitors received a great deal of attention from visiting physicians; both were interviewed by the Associated Press, and one was interviewed by writers from *Life*, *Ladies' Home Journal*, and the *Minneapolis Tribune*. Continuing promotion has brought a sharp increase in the number of medical societies sponsoring local or regional science fairs: four years ago there were only 3; today there are 88 in 35 states.

Farm-City Week: The Association again cooperated with about 400 industries and farm, civic, and professional organizations in the second annual observance of Farm-City Week, held Nov. 16-22 with Kiwanis International as coordinating agency. The department's promotional work included communication with each state and county medical society, a suggested program of activities, liaison information, a general news release and an editorial in The Journal. The A. M. A. also contributed toward the cost of producing advertising mats for distribution to U. S. newspapers.

Poliomyelitis Inoculation Campaign: The department initiated, made arrangements, and prepared informational kits for the Jan. 26 special meeting concerning the need to stimulate public use of the poliomyelitis vaccine. Representatives of every state and territorial medical society attended the conference. Press activities included advance mailing of packets of news releases, programs, and background information plus on-the-spot press room service. All Chicago newspapers, wire services, several television networks, news magazines, and medical publications sent representatives, and several press conferences were held with officials of A. M. A. and the U. S. Public Health Service. The department compiled and distributed follow-up reports in March and April on the development of state and county poliomyelitis inoculation programs. A third report was planned for release when vaccine supplies warranted a renewal of a full-scale campaign.

Medicolegal Symposiums: The department cooperated closely with the Law Department in special efforts to promote and publicize the 1957 Medicolegal Symposiums held during March in Atlanta, Ga., Denver, and Philadelphia. News releases were sent to leading newspapers in the South, West, and East; a department representative attended each meeting to handle press relations and arrange television and radio interviews, and coverage was very good in all media. A 2:20 minute television film, based on the subject of drunken driving and pointing up the forthcoming medicolegal symposiums, was sent to 216 leading television stations and was used on 131 telecasts by 84 stations.

Upcoming Projects: During June, 1957, the department was engaged in preliminary discussions, meetings, and editorial activities on two special projects which were to get under way in the latter half of the year—a public and professional information campaign on Asian influenza and a professional education campaign on the issue of OASI coverage of physicians under the Social Security Act.

Services to State and County Societies

A. M. A. News Notes: This monthly newsletter containing timely reports on Association activities and services was distributed to state and county medical society editors, state executive officers, and A. M. A. department heads and guides.

PR Doctor: Four issues of the PR Doctor Newsletter and Exchange were produced to give medical society personnel useful news and examples of public relations projects carried out by states and counties in all parts of the country. Distribution increased from 4,500 to 4,800 for the newsletter and from 250 to 275 for the exchange section.

PR Packets: Addition of two new kits on health columns and anniversary celebrations brought to 13 the number of informational packets being distributed to state medical society offices for reference and for use as loan kits to county societies.

House of Delegates Report: A roundup story on House of Delegates actions was mailed on the final day of the Seattle and New York meetings to a total of approximately 730 delegates, state and county editors and secretaries, and A. M. A. officers and trustees. Many requests for additional copies were filled after the two meetings.

Public Relations Institute: Nearly 300 representatives of state and county medical societies attended the fourth annual Public Relations Institute for a two-day program including such subjects as science fairs, orientation programs for new members, legislative activities and the planning, production and promotion of local radio and television programs. Informational kits and an exhibit of A. M. A. public relations aids were provided.

Services to President and President-elect

Work of the executive assistant assigned to the President and President-elect included 13 trips covering 42 days and approximately 23,000 miles; assistance in the preparation of 43 speeches heard directly by an estimated 14,000 persons; advance distribution of 54 copies of speeches to newspaper, radio, and television reporters; five special press releases; at least 15 press interviews or conferences; arrangements for nine radio interviews and seven television appearances; assistance in writing the monthly President's Page for THE JOURNAL; material to fill numerous requests for articles, statements, and abstracts of speeches; and assistance with correspondence and itineraries.

Presidential Inauguration Ceremony

The department for the fifth consecutive year handled all arrangements, scripting, promotion, and publicity for the presidential inauguration ceremony at the Annual Meeting. The 1957 program, attended by a capacity audience of 2,500 in the Waldorf-Astoria ballroom, included Dr. Allman's installation as President, his inaugural address, singing by the United States Army Chorus, and presentations of the Distinguished Service Award and a special citation for a Distinguished Layman. Nearly 600,000 persons in the New York area saw a half-hour telecast of the program over station WABD. A 50-second filmed sequence of Dr. Allman's inaugural address, distributed to every television station in the country, was used on 179 telecasts in 143 cities and reached an estimated audience of almost 17 million people. The department also arranged the President's Reception and Ball, which followed the inaugural ceremony.

General Services

In addition to work described in previous categories of this report, the department also published the *Daily Bulletin* at the Seattle and New York meetings; wrote or edited special articles for a number of publications including *Better Homes and Gardens*, Compton's Yearbook, "The Story of Our Time," *Clubwoman*, and United Press; produced and promoted, in cooperation with the Bureau of Investigation, a 16-minute 35-mm. sound slide film on mechanical quackery; cooperated with the Council on Medical Service in preparation of a comprehesive questionnaire for a survey of county society activities; engaged in a variety of activities concerning medical assistants, including publication and promotion of a survey, speeches and liaison on the national, state, and local levels, and preparation and distribution of a new kit for medical societies and medical assistants groups; supervised the guided tour program at A. M. A. headquarters; did a special membership promotion mailing to nonmembers in Massachusetts and New York prior to the 1957 Annual Meeting; assisted with more than 20 speeches for A. M. A. officers and trustees; sent out more than 400 packets on socialized medicine and was working on a single comprehensive booklet to replace the packet; handled arrangements for printing of the new Principles of Medical Ethics in card form for mailing with membership cards; carried out special activities to publicize the International Film Exhibition at the New York Annual Meeting; did liaison work to investigate the possibility of getting Federal Communications Commission assignments of special radio bands for use by physicians; continued the sale of "To All My Patients" office plaques; produced and distributed 26,000 copies of the general program for the New York Annual Meeting; handled photography at the Seattle and New York meetings and serviced requests for prints from the press and other interested parties; worked with the Personnel Department in year-round promotion of the Employee Credit Union; assisted in the writing, reproduction, and distribution of the Secretary's Letter; and maintained liaison with the various councils, bureaus, and departments of the Association.

External Liaison: The department director, assistant director, director of press relations, and other staff members made a total of approximately 60 trips to fulfill speaking engagements or attend meetings of medical societies and other organizations.

Conclusion

The department wishes to express its appreciation to the House of Delegates, officers, and Board of Trustees of the Association, the state and county medical societies, the departments and staff members at A. M. A. headquarters, the Physicians Advisory Committee on Television, Radio and Motion Pictures, and the Advisory Committee to the Director of Public Relations for their cooperation and assistance during the period of this report. The department again feels that steady progress is being made in improving and expanding a sound public relations program based on positive principles and constructive activities.

Council on Mental Health

Since its last annual report the Council on Mental Health has held three Council meetings: November, 1956; February, 1957; and June, 1957. Primary considerations of the Council during the past year have been the development of a series of recommendations to the A. M. A. Board of Trustees on the medical use of hypnosis, a study of the use of tranquilizing drugs by the general practitioner particularly related to the use of these drugs for discharged mental hospital patients, the development of a "Resolution on Hospitalization for Patients with Alcoholism," and a report and recommendations to the Board of Trustees and the House of Delegates concerning the problems surrounding narcotic addiction and its treatment with special reference to how this problem affects the medical profession. The Cou also been concerned with advancing the work of the Joint Commission on Mental Illness and Health, Inc., and stimulating through a third annual conference of mental health representatives of state medical associations the development of closer liaison between the Council and the now 46 Committees on Mental Health of the state medical associations.

Medical Use of Hypnosis

In February, 1956, the Council established an *ad hoc* committee of the whole to consider the general problem surrounding the medical use of hypnosis. This came about as a result of increasing frequent requests for information from physicians throughout the United States as to (1) what the value of hypnosis might be in general medical and surgical problems and (2) where doctors and dentists might go for proper instruction in medical hypnosis. Preliminary investigation seemed to reveal that there were no schools of medical hypnosis that were accredited by any accredited university or medical school. On the other hand, there were many so-called "schools of hypnosis," offering to physicians two-or-three-day lecture courses, that did not seem to be sufficiently well controlled; in some instances correspondence courses were being offered to physicians. The *ad hoc* committee of the Council, chaired by Council member Dr. M. Ralph Kaufman, reviewed all of the recent literature on the medical use of hypnosis, and reviewed in detail a report that had been made by a subcommittee appointed by the Psychological Medicine Group Committee of the British Medical Association which reported its findings in April, 1955. Following this, two general meetings of the committee were held in which representative consultants from other scientific and authoritative groups in the field were asked to participate. As a result of these two meetings the *ad hoc* committee has now tentatively formulated a report from the Council to the Board of Trustees which we expect to present in late November of this year.

Committee on Alcoholism

The Council's Committee on Alcoholism has held two regular meetings since the last annual report was submitted, in March and July, 1957. The members of the Committee individually and in conjunction prepared a series of articles on the modern approach to alcoholism, which appeared in THE JOURNAL, Dec. 29, 1956; Feb. 16, 1957; March 2, 1957; and May 11, 1957. The Committee plans to use these articles as the basis for the preparation of a manual for the use of physicians generally in treating this condition. The articles will be supplemented by additional material prepared by the Committee. Arrangements have been made for the distribution of this pamphlet through the A. M. A. Bureau of Health Education, and it is expected that it will be ready for general distribution in the fall of 1957. The Committee on Alcoholism has continued its information service to physicians through the use of the Classified Abstract Archives of the Alcohol Literature which has been set up and staffed at the Council office in the A. M. A. headquarters.

Narcotic Addiction

In November, 1956, the Council submitted a report on narcotic addiction which had been developed, in conjunction with its Committee on Narcotic Addiction, after a two-year study of the problems surrounding narcotic addiction which related to the medical handling of these problems and to federal and state legislation that was of immediate concern to physicians in the handling of these patients from the medical viewpoint. The Council report comprised 53 pages of text with four pages of important bibliographic references, and tables indicating delinquency or criminal records of patients prior to addiction and representing summaries of changes in the laws and penalties for narcotic violations. The report was presented to the Board of Trustees at its November meeting in Seattle in 1956, and was further referred to the House of Delegates at its meeting in June, 1957. The report was referred to the Reference Committee on Hygiene, Public Health, and Industrial Health of the House of Delegates, which recommended approval of all recommendations. These recommendations were adopted by the House of Delegates. Copies of the report are now available at the Council office in the A. M. A. headquarters.

Third Annual Conference of Mental Health Representatives of State Medical Associations

On Nov. 16 and 17, the Council sponsored its Third Annual Conference of Mental Health Representatives of State Medical Associations to consider related problems in the field of mental health and illness. There were four discussion groups on: (1) Medical use of hypnosis; (2) alcoholic patient as a hospital and medical management problem; (3) benefits and problems encountered by general practitioner with use of newer tranquilizing drugs for patients with emotional illness; and (4) inpatient psychiatric care of children.

The proceedings of the conference have been published and distributed to all state medical associations and other participating organizations. Copies of the proceedings are available at the headquarters office. Preparations are now under way for a Fourth Annual Conference scheduled for Nov. 22-23, 1957, at the Drake Hotel, Chicago. Topics for discussion at the conference are: (1) The Role of the General Practitioner in Relation to the Specific Psychiatric Case; (2) Blue Cross-Blue Shield and Other Voluntary Health Insurance Plans for the Psychiatric Patient; (3) Relationship of the Psychiatrist in Private Practice to the General Hospital in His Community; and (4) Psychiatric and Related Mental Health Problems in Industry.

Smith, Kline and French Project

During 1957, the Council co-sponsored with Smith, Kline and French Laboratories an Intermeeting Television Seminar which was held on May 6, 1957, in Chicago. The seminar was entitled "The Physician and Emotional Disturbances," and its purpose was to bring home more clearly to the general practitioner the kinds of mental and emotional problems that can most successfully be handled at office consultation level. Dr. Leo H. Bartemeier, Chairman of the Council, and a panel of outstanding psychiatrists and general practitioners carried out the seminar through a closed circuit hook-up simultaneously with the Kansas, Oklahoma, Louisiana, Florida, and North Carolina medical associations, which were meeting at that time. At each of the state medical association meetings a moderator was set up to screen and direct the questions of physicians to the central panel members in Chicago. The seminar was extremely well received and future videoclinics are contemplated.

Joint Commission on Mental Illness and Health, Inc.

This commission, which was primarily sponsored by the A. M. A. in collaboration with the American Psychiatric Association, now includes other Commission members from 35 national organizations active in the field of mental illness and health. It has now been actively under way with headquarters offices in Cambridge, Mass., since January, 1956. Dr. Leo H. Bartemeier, Chairman of the Council on Mental Health, has from the beginning been chairman of the Commission's Board of Trustees. Additionally, four other Council members are among the Commission's membership, and Dr. Richard J. Plunkett, Secretary of the Council, is on part-time leave from the Council serving as Associate Director of the Commission's activities. The Joint Commission now has 10 field task forces in actual operation. These include a study of the schools and mental health, a study of psychiatric and mental practices in mental institutions and professional psychiatric community agencies, a study of nonpsychiatric community agencies, a field study sampling survey being carried out by the Research Center of the University of Michigan, a task force on economics of mental illness, mental health manpower, resurvey of research facilities, review of rehabilitation and voluntary agency rehabilitation methods, and a task force on the epidemiology and vital statistics concerned with mental illness and health in the United States with comparative data from other leading nations. The headquarters office has a central professional staff of 45 persons, and advisory professional personnel totaling about 100 persons.

It is expected that some of the earlier reports and recommendations will be released in the fall of 1958, and the deadline for completion of other projects now under way is set for June 30, 1959. Additional task force studies have been planned and will be started as soon as the necessary funds become available.

Liaison Activities

During the past year the Council has continued to give supervisory advice and support to the Woman's Auxiliary to the A. M. A. in the development of its program on mental health, and has worked in close liaison with other councils and committees at A. M. A. headquarters and organizations in the mental health field outside the Association. The Council has continued its active liaison with the American Nurses Association, the National League for Nursing, the American Association on Mental Deficiency, and the American Bar Association, and to support strongly the work of the Joint Commission on Mental Illness and Health, Inc.

Council on Rural Health

Using as evidence the number of state rural health committee reports and the amount of space devoted to these reports published in state medical association journals, the past year has been the most active and most effective year of state rural health committees since the beginning of the work of the Council on Rural Health in 1945. These state and local activities also reflect the increased activities on the part of the Council on Rural Health during the past year.

The various state medical journals where state rural health committees are active have carried not only the routine reports of the committees but rather comprehensive explanations of the work and the philosophy of the committees in those states. The Iowa medical journal, for example, carried a lengthy article by the chairman of the rural health committee giving the work, philosophy, and opportunities that individual physicians and all organized medicine have to help the rural people of Iowa.

Such reports, plus first-hand observations and personal contacts with state association committees, indicate that the program now has been projected to local communities through county committees or individual activities in many of the states.

This has been the ultimate goal of the Council on Rural Health since its beginning and likewise most of the committees in the states. Florida started its work several years ago by making physician-speakers available to local groups and has continued to emphasize the need for reaching the local community while working with state organization leadership. North Carolina has recently reemphasized this philosophy. Ohio, California, Oregon, and several other states give special attention to reaching local community groups. There still is much work to be done in this regard, but the trend toward helping local groups now is definitely established and gaining momentum.

The Council held its 1957 National Conference on Rural Health in Louisville, Ky., and lacked only a few registrants of equaling the record 1956 attendance at Portland. The program was unusually well presented and received and the number of rural community leaders in attendance was outstanding. The Kentucky State Medical Association had made this its number 1 objective and had obtained the cooperation of many organizations and agencies in Kentucky—making this our most successful national conference.

State rural health conferences adapted to the needs of individual states continue to be held in approximately one-half of the states. Iowa held its first conference in March, thus adding another state to this list of activities.

Two regional conferences were held this year. The second one for the New England states was held at Concord, N. H. The first for the Rocky Mountain region was held at Logan, Utah. Attendance from each region was excellent, and this is proving a most effective method of reaching local physicians and farm leaders who are unable, because of circumstances, to go to the national conference. These regional conferences are held in areas where, for sound reasons, state conferences are not usually held. It is our hope that they will stimulate the holding of state conferences in some of these states.

A number of states are now holding district or area conferences where either a medical district or several counties get together and develop a program. There the physicians and rural leaders meet together for a one-day conference. North Carolina does an outstanding job in this regard. This state and a number of states, such as Indiana, Ohio, and Nebraska, also hold county rural health conferences. This type of localized activity is the ultimate goal of the Council's program. It believes that local farm leaders and the physicians of their community are best qualified to discuss and solve on a neighborly basis any problems of health and medical care. Such meetings help to achieve this aim. This takes us as far away from any centralized situation at either the state or national level as is possible. It not only gives local lay people and physicians an opportunity to get acquainted and participate in the solution of their own problems but creates a consciousness of their responsibility in this. This shall continue to be our objective. In the coming year we are intensifying our efforts to interest all state rural health committees in a decentralization of their activities to at least the county basis.

During the past year one of the things that was most significant in increasing the effectiveness of the program of the Council was the national conference for rural health committee chairmen and members held at Purdue University on Oct. 19-20, 1956. Thirty-two states were represented by either the chairman, a member and/or a member of the executive staff of the state medical association. Two days were spent largely in round-table discussion. A set of definite suggestions for solution of the public relations and public contact problems within the states was the result. Most of the states have tried to implement the 10 points agreed upon.

In Georgia and Alabama, for example, the committees, which had been somewhat inactive for several years, became quite active and immediately launched into a program of cooperation with all agricultural agencies with which the Council normally works. Most of the other states surveyed their situations to see how they measured up to the program suggested and stepped up their activities. Thus we feel that the Purdue conference was most productive in its effects throughout the United States.

Three specific problems have been of paramount interest to the Council this year. These are not new in their entirety but they have been highlighted because of the situation across the United States in which each had its setting.

1. A workable, effective health insurance program for rural people has had more attention throughout the country than any other single problem on which we have worked. Rural people have a special problem in regard to insurance and they are earnestly searching for a method of effectively coping with it. Rural people, being largely self-employed, have not yet found a satisfactory way to keep an insurable cross-section enrolled in any program. Moreover, they are prey to the unreliable, limited benefit programs that have an appeal because of the irresponsible type of advertising and sales programs. It is difficult to find an effective way to combat this. There is a tendency on the part of many rural people to exploit any insurance program and with-

draw from it when certain needed medical or surgical procedures have been obtained. The American Farm Bureau Federation, the National Grange, and many local groups are working at the job of educating rural people as to what to look for in an insurance program and how to obtain the most from it. It not only has been one of our biggest problems this year but it will continue to be for a number of years until a satisfactory method and sufficient education have been carried out.

2. A more limited problem that sky-rocketed into the picture this year was that of the insecticide poisons. The great increase in use of the organic phosphate poisons in 1956 made it imperative that the Council on Rural Health alert all state rural health committees and assist them in making contacts with officials of the land-grant colleges and other farm organizations so an effectively operated program of safety, timing and treatment could be carried out. Texas did an outstanding job in this work and at least two-thirds of the states have worked a similar program on a modified basis or taken some steps to alleviate the danger. The program in Texas was jointly developed under the leadership of the Texas State Medical Association with the cooperation of Texas A & M College, the state health department, the farm organizations and with assistance from the various farm organizations.

3. The third problem that has come into prominence since World War II and has constituted one of our growing concerns during the past year was the movement of urban families into rural communities. These are not farm people but they are a part of the rural community. The movement is that of families of all economic levels seeking living space in the country, consisting of very small to moderate-sized tracts of land on which a home of meager to elaborate proportions is constructed. The problem of sewage and garbage disposal, water supply, and other factors of sanitation and even the entire community life are involved. This situation is growing so rapidly that it will become increasingly more important in a rural health program in the years ahead. The activity and interest of the Council during the past few years is merely the beginning of what must become a large program in which American medicine exercises leadership.

Though physician placement is not a sole function of this Council, it is an activity of major interest and importance to us. The Council has been active in it for the past 12 years. In many states the rural health committee has responsibility for placements. The Council constantly works with rural people on matters of obtaining a physician. This was one of the chief problems that brought the Council on Rural Health into existence and, though the problem is not as acute now as it was then, it handles this work in its routine contacts with the states, since the chief need for new or additional physicians is in the rural areas.

Many state medical associations have assigned the physician placement to the committee on rural health, and in Texas the committee is known as the Committee on Rural Health and Doctor Distribution. In California, Georgia, Alabama, Missouri, and Pennsylvania the work is directly assigned to the Committee on Rural Health. In others the committee consults with rural groups and the work is handled by members of the executive staffs of the state medical associations. During the past year much attention was given to this work.

In Indiana the Chairman of the Council assisted by advising and guiding a rural community directly in obtaining a physician. All of this was done in cooperation with the state medical association.

The woman's auxiliaries in many states and the Woman's Auxiliary of the American Medical Association have taken a particular interest and have been active in the field of rural health. They have rendered outstanding service from both a public service and a public relations point of view in many states. They are promoting the distribution of the "Family Health Record" booklets and the personal health information cards which are discussed elsewhere in this report. They assist the state medical associations in the region, state, district, and county rural health meetings. In Indiana, for example, the county auxiliaries, under the leadership of the state woman's auxiliary, are sponsoring county rural health conferences. Their work has been excellent and invaluable.

In at least five states—Pennsylvania, Mississippi, New York, Missouri and Nevada—the committees on rural health of the state medical associations have been working with outside groups, such as the land-grant college, in making studies of local health situations, supply and distribution of physicians, and related problems. In Pennsylvania a study was made of the reasons physicians gave for having settled in rural areas, enumerating some of the advantages that physicians sought there. In Mississippi there has been a continuing study of the age composition, as well as distribution of physicians. In New York the study is on the over-all aspects of location of situations in which there is need. Missouri has made an extensive study of the problems of indigence in medical care in rural areas. A survey was made in Nevada of the availability of medical and allied personnel, health and hospital facilities, and related factors by the Agricultural Extension Service, University of Nevada. This study was formulated, developed, directed and supported by a special group of nine agencies and organizations set up and headed by the Committee on Rural Health, Nevada State Medical Association.

Several years ago the Council adopted the practice of meeting with the governing bodies of the major farm groups in the United States. They meet with two of these each year. This year they met with the Committee on Extension Organization and Policy of the Association of Land-Grant Colleges and Universities and with the executive body of the National Grange. From the standpoint of getting better understanding, this is one of the important activities of the Council, since it brings these groups closer together in an atmosphere of constructive discussion and criticism. It is interesting to note that at the National Grange conference we were requested to prepare suggestions for local units of the Grange to use as discussions and study of health and medical care. These have been prepared and now are in the process of distribution to 10,000 units throughout the United States.

The Council has established two new activities this year. Patterned after the farm magazine health column service operated for several years in Colorado and later in Iowa, Montana, and Wisconsin, the Council established a farm magazine health column service for 34 of the major farm publications in the United States. The aggregate distribution of the publications is over 20 million. Of course, not all of these are farm people but they are rural, village, or even large-town residents. The articles for this service are originally prepared by physicians and are edited by a special writer, Robert Perkin of Denver, who has been on a consultant basis with the Colorado State Medical Society. They are distributed by the Council through the executive secretaries of the state medical associations.

This has been a most gratifying experience. The farm magazines have invited the Executive Director to become a member of the American Association of Agricultural Editors, thus giving the Council a close working relationship with the farm press. The philosophy, organization, and progress of the entire American Medical Association, as well as the activities of the state medical associations, are now better understood by this important segment of the American press. The Council is now welcomed to confer, suggest, and advise with the individual papers, and is looking forward to the expansion of the service somewhat during the coming year. It is done with very little capital outlay and provides the Council with an outlet for sound health information that has not heretofore been available.

The second of the new activities was the compilation and publication of a family health record book and a personal health information wallet card, carried out jointly with the Department of Public Relations. These publications are being made available to all types of groups throughout the United States and is not exclusively a rural activity. It is, however, one of the most appreciated services by rural people in which the Council has engaged. An unusually fine response has come from all types of rural groups in the matter.

The health identification card was originally developed by the Council at the special request of the American Farm Bureau Federation. It is printing some of its supplies where the Council's supplies are not sufficient to meet its needs. Recently the Department of Public Relations arranged to produce 1 million of these cards and thus the Council will be able to supply more of the Farm Bureau's needs. The Department of Public Relations printed 1 million copies of the health record booklets earlier this year. We think that rural groups will use 750,000 copies within the coming year.

A new development in the rural picture has been a joint project known as Rural Development carried on by several governmental and state agencies and organizations. The purpose of this project is to overcome the low-income situation in major sections of the United States. Fifty-four experimental counties have been selected to date and several additional ones are under consideration. In this work the business and professional interests are invited to sit with agricultural leaders to discuss local opportunities for improving the incomes within the area. Industrial leaders, Chamber of Commerce representatives, agricultural processing groups, and others survey and discuss new opportunities for economic improvement. In the entire picture there arises a need for health and medical care facilities. For this reason the Council is urging state and county medical societies to become interested in the project and participate with these rural leaders. There is already evidence that the health facility planning, hospital and medical care will be done, and sometimes with some distortion, unless there is competent medical advice. This has been given much attention through the year and probably will be given more during the coming year.

During the past year Dr. George F. Bond of Bat Cave, N. C., resigned from the Council to return to the Navy and the Board of Trustees appointed Dr. W. Wyan Washburn, formerly the chairman of the Committee on Rural Health in North Carolina, to succeed him.

All members of the Council have been exceedingly active in their regions during the past year. The Executive Director and the Chairman of the Council have had more frequent conferences during the past year than was possible before and therefore more careful planning was done in the areas of need, both present and future, and problems of greatest concern in the rural picture.

The Executive Director has visited 37 states during the past year, working with all agricultural groups that are available at the time of these visits. These local contacts are considered one of the most important activities of the Executive Director, since it brings an American Medical Association representative face to face with groups that have no other opportunity for contact with the A. M. A. The American Medical Association and the state medical associations have thus taken on the aspect of a more personal, interested group than has been the case heretofore. Moreover, the Executive Director calls on the headquarters of state and national farm organizations, such as the Farm Bureau, Grange, American Association of Land-Grant Colleges, and many other groups to confer with them on problems that they see. These organizations have become accustomed to calling on the Council for help and advice.

In addition to regular routine duties, the Council office also (*a*) acts as an information source for various health services of organizations and agencies in rural areas; (*b*) continues to maintain close working relationships with state medical societies and state committees handling rural health matters; (*c*) carries out assignments delegated by the Chairman and members of the Council; (*d*) keeps current a roster of all state rural health committee members; (*e*) handles the preparation and distribution of national meeting preconference fliers, conference programs, and personalized invitations covering a mailing list of approximately 5,000 names; (*f*) compiled and distributed approximately 3500 digests of the last national conference; (*g*) handled miscellaneous mailings of specialized material of particular interest to rural people; (*h*) mimeographed and mailed three issues of the Parade of Progress newsletter to a mailing list of approximately 600; (*i*) mimeographed and mailed 10 issues in the series of monthly farm magazine articles, special reports covering field activities, etc.; and (*j*) arranged for one advisory, one executive and two Council meetings.

The Council feels that this has been its most effective and successful year. It expresses its sincere appreciation to the House of Delegates, the elected officers, the Board of Trustees, and the executive officers for the support and encouragement each has given. We are also appreciative of the help given by all other divisions of the American Medical Association.

Division of Councils of Therapy and Research

The Division consists of the Council on Drugs, Council on Foods and Nutrition, Council on Medical Physics, Committee on Research, Committee on Pesticides, Committee on Toxicology, Committee on Cosmetics, Bureau of Investigation, and the A. M. A. Chemical Laboratory.

Since the seal-acceptance programs of the American Medical Association were discontinued as of Feb. 15, 1955, considerable time has been spent in modifying and improving new programs of operation for the various departments within the Division, primarily with the view of providing a better informational service on scientific matters to the medical profession. The greatly increased activities of the Council on Drugs and the Council on Foods and Nutrition have been particularly noteworthy in this regard, and it is much more apparent than in the previous year, which immediately followed discontinuance of the seal-acceptance programs.

A considerable amount of scientific material has been published during the past year under the sponsorship of the various departments within the Division. The editorial section of the Division has continued to review this material for accuracy of grammar and uniformity of style prior to publication.

Numerous inquiries of a general or specific nature which pertain primarily to drug therapy or research were received by the Director of the Division or referred to him by other departments within the American Medical Association. Not infrequently it is difficult to give a categorical answer, but every effort has been made to provide as informative a reply as possible. It is perhaps worthy of note that some physicians who apparently expected to be referred to some other agency expressed surprise at finding that the American Medical Association does render such service.

The Director of the Division also serves as Chairman of the A. M. A. Advertising Committee. In the latter capacity he has assumed the responsibility of screening proposed advertising copy for A. M. A. publications in order to insure compliance with the A. M. A. principles governing advertising and to maintain as high standards as are reasonable and practicable. Every effort has been made during the past year to continue the policy of being as fair and consistent as possible in handling the many problems which arise in connection with advertising in this highly competitive field.

Council on Drugs

This report covers the activities of the Council on Drugs for the annual period from July 1, 1956, to June 30, 1957. Its activities were comprised chiefly of scientific and administrative operations essential to the maintenance of its regular program for the evaluation of drugs. The Council also considered a variety of special reports on therapy as well as specifically assigned projects undertaken in collaboration with other councils of the Association.

Early in the period covered by this report, the Council voted to extend and revise its policy for cumulative listing of commercial names of drugs so as to include them in the text of published supplemental statements and reports, as well as in conjunction with monographs on new drugs. Appropriate notice of a change in operation to institute this extension of policy was published in The Journal of the American Medical Association for Nov. 3, 1956.

The annual meeting of the Council was held at the Palmer House in Chicago on Nov. 2 and 3, 1956. Dr. Torald Sollmann, Chairman, and Dr. James P. Leake, Vice Chairman, were reelected to these respective offices by unanimous vote of the Council. The Council received annual reports presented by the respective secretaries of its Committees on Pesticides, Research, and Toxicology. The annual reports of these Council committees for the current period are separately presented in conjunction with this annual report. At its annual meeting the Council also was informed of the progress and operational aspects of the program for evaluation of individual drugs and of the project for sponsoring publication of reviews by outside experts on the current status of therapy in various diseases. A summary of these Council operations appears in the last portion of this report.

Several transactions at its annual meeting were of special importance to the future work of the Council. Of particular significance was the decision to change its name from the Council on Pharmacy and Chemistry to the Council on Drugs, subject to approval by the Board of Trustees, and to alter the title of its well-known annual publication, New and Nonofficial Remedies to New and Nonofficial Drugs. These changes were considered necessary to reflect more clearly the Council's previously instituted program for evaluation of drugs. By authorization of the Board of Trustees, both changes were simultaneously announced and editorialized in The Journal for Feb. 23, 1957. The Council also voted to expand the table of contents of the forthcoming 1958 edition of New and Nonofficial Drugs to include page references to subsection as well as chapter titles, in order to make such classified information more accessible. It was further voted to reinstate the capitalized version of the abbreviation for gram (Gm.) which is used for the official publications, Pharmacopeia of the United States (U. S. P.) and the National Formulary (N. F.), and to encourage this form in writing prescriptions so as to avoid possible confusion between gm. and the abbreviation for grain (gr.). Available sales figures for current editions of the Council's other book publications, Epitome of the U. S. P. and N. F., Fundamentals of Anesthesia, and Glandular Physiology and Therapy, suggested that this factor should be considered before planning the future editions of the two latter publications.

During its annual meeting the Council adopted a resolution for presentation at memorial services for the late Dr. Anton Julius Carlson, in recognition of his membership on the Council from 1926 to 1931 and his lifelong devotion to high scientific ideals.

The Council discussed at its meeting various aspects of its cooperation with manufacturers in the early selection of suitable nonproprietary names for drugs, and the transmission of drug terminology for consideration by other responsible outside agencies. The possibility of closer liaison with the U. S. P., explored last year, was referred for further consideration to the U. S. P. director of revision. A suggestion for increasing the Council's cooperation with the World Health Organization (WHO) and the British Pharmacopeia Commission (BPC) was referred to the Secretary of the Council.

Following the annual meeting, the Council considered and instituted a procedure proposed by the Secretary for transmitting all nonproprietary names negotiated with domestic commercial sources to the U. S. P., WHO, and BPC, and in the case of biologics and addicting drugs also to the National Institutes of Health of the U. S. Public Health Service, so as to allow these agencies a limited period of approximately three weeks in which to forward objections before Council adoption of drug terminology is considered final. The time limit was considered essential to avoid delay in the publication of Council statements on new drugs and to meet the desire of American manufacturers for early nomenclature decisions prior to printing of labels.

By action of the Board of Trustees on the names of candidates selected and submitted by the Council to fill the expiring terms of office of three of its members, Dr. Henry K. Beecher, Dr. E. M. K. Geiling, and Dr. E. M. Nelson were invited and accepted reappointment to serve on the Council for additional five-year terms through 1961. By similar means, Dr. F. A. Simeone of Cleveland was invited and accepted appointment to membership on the Council to fill the unexpired term of office, extending through 1959, created by the resignation of Dr. Harry Eagle.

In accordance with a resolution adopted by the A. M. A. House of Delegates at the Seattle Clinical Meeting in November, 1956, the Council on Drugs and the Council on Foods and Nutrition were directed to conduct a joint study of all presently available information concerning the fluoridation of public water supplies and that a documented report of the findings, together with any recommendation arising from these findings, be presented to the House of Delegates at its meeting in Philadelphia in December, 1957. The Trustees directed that this report be submitted to the Board at its meeting in September, 1957. The Chairman of the Councils subsequently appointed two members from each to serve as a joint committee for consideration of a separate report to be prepared on this subject.

During the latter part of this report period, the Council was requested to consider a proposal, also submitted to the Council on Industrial Health, to "standardize" the use of tetanus antitoxin with a view to minimizing the medicolegal hazards of its use or nonuse, and to encourage universal active immunization with tetanus toxoid as a means to avoid the use of antitoxin in cases of injury. A consensus of members of the Council felt that it should not undertake to "standardize" any particular therapy because this would violate the principle of individuality in treatment. The Council, however, concurred with the view that wider active immunization with tetanus toxoid should be encouraged and expressed a desire to explore sponsorship of a brief report on the subject of tetanus immunization (to include the use of antitoxin) to be prepared by an outside authority with extensive experience in this field.

Over the period reported, the Council completed the evaluation of available scientific evidence supplied by cooperating commercial outlets for 46 drugs, 6 additional salts or esters, 6 new clinical uses and 6 additional routes of administration not previously described in the Council's column in The Journal or in its annual publication. As of the end of the current period, evaluation of evidence was in progress but not completed for 24 additional drugs, one additional ester, one additional use and one additional route of administration. During the year, the Council published in its column in The Journal a total of 48 new monographs on drugs (including additional salts and esters) and 15 supplemental statements on new uses or routes of administration of previously evalutated drugs. A total of 42 new monographs were added to the 1957 edition of New and Nonofficial Remedies, in addition to revision of existing monographs on the basis of evaluated new uses and routes of administration. A few of the monographs published during the year were for older drugs which the Council was unable to describe under its former procedure, but for which it was considered desirable to provide information under its current program. The Council also authorized a reorganization of contents and retitling of chapters for the forthcoming 1958 edition of New and Nonofficial Drugs so as to bring about an improved classification of the drugs described in the book.

During the report period and through the cooperation of the drug industry, the Council adopted a total of 30 nonproprietary names for drugs not under evaluation at the time the terminology was proposed. Advance consideration of such terminology permits subsequent evaluation and description of drugs without debate on their nomenclature and encourages the early use of convenient nonproprietary names in the medical literature.

In addition to evaluation of evidence and publication of monographs and statements on commercially available individual drugs, the Council published six special reviews authored by outside experts on the current status of therapy in coronary artery disease, congestive heart failure, hypertension, the pneumonias, syphilis, and tuberculosis. The Council also sponsored one authored report on antibiotic mixtures, two reports by its Committee on Toxicology, and one report of its Committee on pesticides. The Council collaborated with the Council on Foods and Nutrition in sponsoring for early publication a joint report on flavonoids.

During the year the Council headquarters staff continued to provide direct replies to numerous outside inquiries concerning drugs and drug therapy, as well as requests for information in this field from other councils, committees and departments of the Association. The Secretary presented a paper on Council evaluation of recent drugs at the annual meeting of the American Society of Hospital Pharmacists of the American Pharmaceutical Association in New York City on April 29, 1957. The Secretary also attended several scientific conferences and meetings of importance to the work of the Council.

Council on Foods and Nutrition

This 1957 report of the Council on Foods and Nutrition covers a period that saw an expansion of the Council's new nutrition education program. The Council sponsored two symposiums, published 16 articles in THE JOURNAL, and reviewed 79 institutional advertisements and 7 special education materials. A great many cooperative programs were initiated, and the Council enjoyed an expanded influence on public health.

The program of the Council on Foods and Nutrition is designed to assist in the attainment and maintenance of a high level of nutritional health in the nation. This program is being carried out primarily through the medical profession.

One of the continuous programs of the Council is to present to the readers of THE JOURNAL articles of current interest designed to summarize and interpret present knowledge or to point out the need for additional information in the area of nutrition in medicine. These articles are written by various authors who are selected by the Council. Before publication the manuscripts are critically reviewed for scientific accuracy by the Council. The articles emanating from the Council-sponsored symposiums (to be mentioned later) and those that represent a particular series are made available as monographs after publication. Reprints of all articles are made available and the large numbers of requests for them, to both the author and the Council office, is an indication of the effectiveness of this part of the Council's expanded education program.

Sixteen articles were prepared at the request of the Council and have appeared in THE JOURNAL of the American Medical Association. During the period covered by this report 10 more manuscripts have been sent to the Editor, 12 have been received and are being processed for publication in the near future, and 23 additional articles are being written. A series of 12 articles on nutrition is being prepared for publication in *Today's Health* under the cosponsorship of the Council and the Bureau of Health Education.

A special report on low-sodium milk was issued by the Council (*J. A. M. A.*, March 2, 1957). Although it was based on a limited number of samples, the results were significant enough to call attention to the fact that the procedure used to remove the sodium from the milk also reduced the amounts of certain important vitamins. This article has proved popular and has been reprinted by several of the concerns producing low-sodium fresh milk. It was also presented before a meeting of the Food and Nutrition Board of the National Research Council.

During the course of the year the Council completed its consideration of a statement on vitamin and mineral supplements. The preparation of this statement was undertaken at the request of the Association's Advertising Committee, and it is anticipated that the statement will be published in THE JOURNAL in the near future. The need for an authoritative opinion on the subject is quite evident when one considers the enormous number of such preparations and the extent to which the medical profession and the public are being currently bombarded by them. The Council anticipates that the publication of its opinion will help exert a stabilizing influence on the promotion and formulation of this type of product.

The Council published two special booklets during the year: "Statements and Decisions of the Council on Foods and Nutrition of the American Medical Association" and a revised edition of "Your Guide to the Council on Foods and Nutrition." The latter presents the objectives and activities of the Council, together with a picture and short biographical sketch of each Council member. "Statements and Decisions" was designed to present, in concise style, the accumulated opinions of the Council concerning the labeling and promotion of foods as well as the proper use of certain terms and claims in advertising. Of particular interest to physicians and health authorities is a compilation of the Council's statements on public health nutrition. The booklet is in loose-leaf form to permit the easy insertion of additional statements (such as the statement on low-sodium milk) without the necessity of completely reprinting the booklet.

Symposiums

On March 15, 1957, the Council on Foods and Nutrition in conjunction with the Tulane University School of Medicine, Louisiana State University School of Medicine, New Orleans Graduate Medical Assembly, and the Orleans Parish Medical Society sponsored its annual symposium at New Orleans on "Fats in Human Nutrition, with Particular Attention to Fats, Cholesterol, and Atherosclerosis." The papers presented at this symposium appeared in the Aug. 24, 1957, issue of THE JOURNAL. The panel discussion will be reproduced, together with the published articles, in a special monograph.

An important announcement emanated from the symposium: Drs. Hartroft and Thomas of Washington University Medical School, St. Louis, announced that for the first time myocardial infarcts had been produced experimentally in the rat.

The participants in the symposium concluded that, even though dietary fat intake was implicated in some manner in the etiology of coronary atherosclerosis, at the present time there is insufficient information available to justify any major changes in the general American diet. It was pointed out that much more information will be required before any general pronouncement can be made.

The symposium served an important function in clarifying the thinking of the food industry on the relationship of fats to atherosclerosis.

The Council received excellent cooperation from the Public Relations Department in presymposium announcements and in news coverage during and after the meeting. As a result of the symposium, members of the Council and of the Council office were called upon to represent the Association at a number of meetings concerned with diet and heart disease.

A second symposium was conducted during the year. This symposium, entitled "Diet as a Preventive and Therapeutic Tool for the Doctor," took the form of a question-and-answer exhibit in the Scientific Exhibit of the A. M. A. Annual Meeting in June at New York City. It was cosponsored by the Nutrition Foundation, Inc., New York City (further reference to cooperation with the foundation will be made later). The 22 topics presented for discussion were grouped in daily themes as follows: Diet and Reproduction, Diet in Cardiovascular Renal Disease, Diet in Other Problems of Internal Medicine, Diet in Pediatrics, and Weight Reduction. At the invitation of the Council, outstanding authorities took part in the symposium. The enthusiasm of both the speakers and the audiences was such that the Council was requested to make the question-and-answer symposium an annual feature at the Annual Meeting of the A. M. A.

Exhibits

The Council showed a new physical exhibit prepared especially for the New York meeting, in cooperation with the Bureau of Exhibits. The exhibit, entitled "Foods as Oral Electrolytes in Replacement Therapy," formed the core of a new feature at the Scientific Exhibit section—a Food and Nutrition Exhibit Symposium. This exhibit was shown again by request at the seventh American Congress on Maternal Care in Chicago, following the New York A. M. A. meeting.

Other exhibit activities included the exhibition of "You Can Reduce" at the New York State Home Economics Association meeting in Albany and a showing of the same exhibit at the meeting of the Association of American Women in Radio and Television in St. Louis. This type of education activity is being expanded, with plans to exhibit at least at six medical and allied professional meetings each year. A number of existing exhibits are being renovated and revised in order to make them more useful and informative.

Cooperation with Nutrition Foundation, Inc.

An important feature of the new program of the Council on Foods and Nutrition is a cooperative project in nutrition education with the Nutrition Foundation, Inc., of New York City. This project is in the form of financial assistance and cooperation in certain phases of program planning. The Nutrition Foundation sponsors the Joseph Goldberger Award in Clinical Nutrition that is presented by the Board of Trustees of the A. M. A. in cooperation with the Council. The Goldberger Award for 1957 (a gold medal and $1,000) was presented to Dr. Paul György of Philadelphia for his outstanding achievements in the field of vitamin chemistry and infant nutrition. For the first time, the Goldberger Award was presented at the Opening Meeting of the House of Delegates. Later in the week Dr. György delivered the Goldberger Lecture before the Section on Pediatrics, and a special plaque was presented to him at this time. The Goldberger Award and Lecture will be special features at future Annual Meetings of the A. M. A.

As mentioned previously, the Nutrition Foundation cooperated in co-sponsoring the question-and-answer exhibit at the New York meeting. A third project, co-sponsored by the Foundation, is the publication in The Journal of articles on particular phases of nutrition education.

Joint Committee on Fluoridation

In accordance with a resolution adopted by the A. M. A. House of Delegates at the Seattle Clinical Meeting in November 1956, the Council on Drugs and the Council on Foods and Nutrition were directed to conduct a joint study of all presently available information concerning the fluoridation of public water supplies.

Review of Educational Materials

Educational advertising concerning the nutritional and physiological values of foods without reference to specific brands, processors, or distributors continues to be reviewed by the Council on request. When such material has been examined and found to be consistent with current authoritative medical opinion, a statement may be used indicating this fact.

More than 100 institutional advertisements, books, and booklets were reviewed by the Council for scientific accuracy during the year. These materials were voluntarily submitted principally by the American Meat Institute, the American Bakers Association, and the National Dairy Council and were prepared primarily for use in medical journals or for distribution to the medical profession.

A large number of manuscripts and similar material was informally reviewed by the Council office or by individual consultants of the Council. The Council office was pleased to review seven manuscripts for the Editor of *Today's Health*, as well as several that were referred by the Public Relations Department.

Other Cooperative Programs

The Council is currently engaged in a number of cooperative programs with other agencies. These include a joint program with the Public Health Service, the American Heart Association, the American Dietetic Association, and the Nutrition Foundation to produce a series of booklets on sodium-restricted diets that will combine or supplant the several outstanding diet booklets on this subject.

The Council has undertaken a joint project with the American Dietetic Association to study bland and low-residue diets to determine if many of the diets currently in vogue can be combined and to make further study of certain foods to determine why they apparently are irritants or gas-promoting.

The Council office and/or members of the Council act in a liaison capacity with a number of organizations including the American Pediatric Society, American Academy of Pediatrics, Food and Nutrition Board of the National Research Council, Interdepartmental Committee on Nutrition for National Defense, National Health Council (Conference on Overweight), and the Conference in Nutrition Education conducted by the Department of Agriculture.

This year the Council instituted a new activity in the field of nutrition information. In cooperation with the Nutrition Committee of the Illinois State Medical Society, the Council sponsored an address by Dr. Robert Olson at its annual meeting. Dr. Olson, professor and head of the department of nutrition of the University of Pittsburgh Graduate School of Public Health, presented one of the key addresses at the meeting. The purpose of sponsoring speakers for such meetings is to stimulate an interest in clinical nutrition and to encourage the program of the other groups interested in nutrition.

The Council, in cooperation with the U. S. Public Health Service, supported a research program at Vanderbilt University, division of nutrition, School of Medicine, to study the folic acid and pyridoxine content of high-cost adequate, low-cost adequate, and poor diets. The project is under the supervision of Dr. William J. Darby. The results of this study (to be published in the near future) indicate that in diets considered as adequate (in other respects) about 0.2 mg. of folic acid and 2.5 mg. of vitamin B_6 are supplied per day. The nutritionally poor diets contained about one-third and one-half these amounts respectively. This work was carried out to obtain information needed in the preparation of the statement on multivitamins mentioned earlier.

The Council office has increased its cooperation with the Queries and Minor Notes section of The Journal. The editor of this section is now routinely sending all inquiries dealing with foods and nutrition to the Council office. Those that cannot be answered directly by the office staff are referred to Council members having a special knowledge in the area involved.

Questions concerning food and nutrition that appear in Dr. William Bolton's section of *Today's Health,* entitled "That's a Good Question," are also routinely sent to the Council office for review before being published.

Plans have been made by the Council and the Bureau of Investigation for a film on food fads and fallacies. The Public Relations Department is assisting on the film which should be released in mid-autumn.

Other Activities

In his first year of office the Secretary was invited to take part in a number of programs as a representative of the Council. These included addresses before a Diet and Nutrition Forum of the Virginia Council on Health, Richmond, Va.; The Food, Drug and Cosmetics Section of the New York Bar Association; Food Technology Symposium, Federation of Biological Sciences; Annual Meeting of the National Live Stock and Meat Board; Syracuse University Nutrition Workshop; a Seminar of the American Meat Institute; TV Nutrition Workship; Chicago Nutrition Society; and a radio program, "Agriculture U. S. A.," WGN.

A number of articles were written by the Secretary and staff members of the Council office. These included:

1. The Program of the Council on Foods and Nutrition of the A. M. A., New York State Bar Association, Food, Drug, and Cosmetics "Drug Quarterly" 1957. Philip L. White, Sc.D.
2. Fats in the Diet (Good Health)—*This Week* Magazine. Philip L. White, Sc.D.
3. National Trends in Nutrition, Virginia Health Council. Philip L. White, Sc.D.
4. Sense and Nonsense About Diets, *Women's Club* Magazine. Philip L. White, Sc.D.
5. Comments on the article "Fats in Food," *Food Processing.* Philip L. White, Sc.D.
6. "Nutrition for Homemakers," Mrs. Laurie M. Leigh
7. Effect of Feeding on Atherogenic Diet on Magnesium Requirement. J. J. Vitale, P. L. White, M. Nakamura and D. M. Hegsted. *Federation Proceedings*
8. "Weight Control Shouldn't Wait!" *National Business Womans Magazine.* Miss Mary Jane Kibler

For the A. M. A. employees, the Council office maintains a bulletin board that presents information on nutrition, foods, meal planning and service and food purchasing.

A greater awareness of the importance of nutrition in the practice of medicine has been evidenced by the publication in THE JOURNAL of several editorials on various aspects of the subject. Special mention was made of the Council's exhibit symposium at the June, 1957, meeting of the Association in the write-up of the scientific programs appearing in THE JOURNAL (June 29, 1957, page 982).

Organization

At its meeting in New Orleans in March, 1957, held in conjunction with the symposium on fats and atherosclerosis, the Council reelected Dr. Charles S. Davidson as its Chairman and Dr. John B. Youmans as its Vice Chairman. Dr. Robert Jackson and Dr. George Cowgill were reappointed to another term as members of the Council.

Council on Medical Physics

During and following the Council's organizational meeting in June, 1956, it developed a program which would serve as a starting point for its operations. The purpose of the Council on Medical Physics is to encourage an understanding of the actions and rational uses of apparatus and physical methods employed in the diagnosis, treatment, and prevention of disease. Since the actions of physical methods and apparatus used in medicine are explained in terms of the sciences of physics, biophysics, and medicine, the Council was named the Council on Medical Physics. In pursuit of its stated purpose, the Council program consists of the evaluation of classes of apparatus and physical methods, the encouragement of research, and the performance of such other services within its purview as may be assigned by the Board of Trustees or decided upon by the Council itself.

Approximately 350 items of reprinted matter were distributed from the Council office during the year. These covered such diverse fields as artificial respiration, therapeutic uses of ultrasonic energy, illegal operation of diathermy apparatus, and the use of electrical currents for muscle stimulation. The Council sponsored the preparation of and distributed approximately 7,000 pocket-sized instruction cards on the use of the back-pressure arm-lift method of artificial respiration.

In connection with the Federal Communications Commission hearings on the allocation of frequency bands above 890 megacycles, the Council petitioned the Commission to retain those frequencies that had previously been assigned to industrial, scientific and medical use. One of these frequencies, 2,450 megacycles, is presently used by microwave diathermy apparatus. Preliminary research has shown that another frequency, 915 megacycles, may prove also to have usefulness as a source of medical microwave diathermy.

The Council has initiated the following projects: an evaluation of strontium-90 (beta) ophthalmic applicators; a symposium on the mouth-to-mouth method of artificial respiration which will present the technique of application and the scientific evidence in support of the efficacy of this recently popularized method of artificial respiration; an evaluation of the principles and practice of mechanical resuscitation; an evaluation of oxygen therapy apparatus; an evaluation of electronic resuscitation; an evaluation of negative ion therapy apparatus; an evaluation of cardiac arrest and defibrillation apparatus; and the preparation of an exhibit on emergency artificial respiration.

The Board of Trustees referred that portion of the November, 1956, House of Delegates Supplementary Report D calling for a continuing study of radiation protection, and the June, 1957, House of Delegates resolution 18 on the Atomic Energy Act of 1954 to the Council on Medical Physics for consideration and report. The collection of data necessary for study of these programs is under way. At its June, 1957, meeting, the Board of Trustees voted to request the Council on Medical Physics to consider the establishment of a special committee on atomic medicine. At the present time these matters are under study by the Council which will report on them as soon as possible.

Committee on Research

The Committee on Research has stressed the revitalization of all of its activities during the past year. It sponsored a reanalysis of its extensive steroid-hormone-mammary cancer study in the hope that the data will be reported in the near future. It authorized the reorganization of its diabetes and pregnancy wastage study in an effort to answer questions concerning the efficacy of steroids and hormones in the treatment of diabetes complicated by pregnancy. It approved the formation of a Subcommittee on Publications whose primary purpose will be to solicit original articles, abstracts, and reviews dealing with advances in research in the basic medical sciences. The Committee reaffirmed its stand favoring the establishment of a permanent organization which will award grants to medical schools for the purpose of stimulating research in the basic medical sciences.

Cooperative Investigation

The Committee on Research is authorized to undertake collaborative investigations in problems of interest to the profession in which no single investigator has a large enough series of cases to publish on the subject. The Committee will bring a group of experts together to counsel on a plan for study and for the development of criteria to be used in this undertaking. Data will then be assembled from the sources on uniform, standardized report forms subjected to statistical evaluation, and used as a basis for a report in THE JOURNAL for the benefit of the profession.

Steroids and Hormones in Mammary Cancer: The Subcommittee on Steroids and Hormones, as constituted, was dissolved during the past year and the work of its Cancer Study Group was taken over by a newly formed Subcommittee on Breast and Genital Cancer. This subcommittee has undertaken a reanalysis of the case reports which were accumulated by the Cancer Study Group. A research fellow has been obtained who will follow up and complete these reports. It is anticipated that the reanalysis, coding, and evaluation of the data will be completed by the end of 1957 when the final report on the effect of steroids and hormones in the treatment of mammary carcinoma will be prepared.

Diabetes Mellitus Complicated by Pregnancy: The Study Group on Infertility and Pregnancy Wastage was abolished during the past year and was reconstituted as the Subcommittee on Diabetes and Pregnancy Wastage. The Committee on Research has approved a change in personnel for the group and the continuation of this study for a period of at least two years. The Subcommittee intends to concentrate on a series of 200 to 300 cases of diabetic, pregnant women treated with steroids and hormones and to compare them with a similar-sized group not treated with these substances. It is hoped that this study may answer a number of questions regarding the value of steroid hormone therapy in diabetic, pregnant women and open new areas of investigation in the physiology of pregnancy, the cause and treatment of diabetes, neonatal mortality, and related problems.

Registry of Blood Dyscrasias: The Registry on Blood Dyscrasias got under way during the past year, and to date 280 reports of blood dyscrasias have been received from 75 collaborating physicians, involving the possible association with 175 drugs or chemical substances. The Subcommittee on Blood Dyscrasias has distributed several "alert letters" to the collaborators bringing to their attention instances in which drugs were considered the possible etiological agent of blood dyscrasias. The reports to the Registry are being processed, and it is expected that summary tables will be prepared soon for distribution to the collaborating physicians.

Registry of Adverse Reactions: Some progress has been made during the year concerning this proposed function through discussion with representatives of the pharmaceutical industry and the responsible governmental agency. It is anticipated that additional conferences will be held to survey the problem and to develop a plan for an adequate system of reporting the untoward effects of therapeutic agents.

Educational and Informational Projects

The Committee on Research authorized the formation of a Subcommittee on Publications which will solicit a series of original articles, abstracts, and reviews dealing with advances in research in the basic medical sciences. The proceedings of the conference on "Comparison of the Biological Properties of Steroids and Hormones," held under the auspices of the former Subcommittee on Steroids and Hormones, were transcribed and reproduced for distribution during the year to participating physicians, scientists, the pharmaceutical industry, and the libraries of all medical schools. Since the Registry on Blood Dyscrasias is still in the "pilot stage," its material has been distributed only to the physicians participating in the plan. It is hoped that in time wider distribution might be given to the "alert letters" or the "summary tables" prepared by the Subcommittee on Blood Dyscrasias.

Grants-in-Aid

The Board of Trustees generously made up a part of the funds which had been lost to the Subcommittee on Grants-in-Aid from the curtailment of monies from an outside source. As reported last year, there has been a continued increase of interest in this A. M. A. project. Since more applications were received during this year than ever before, the request for funds exceeded the amount appropriated by the Board by more than 60%.

The Subcommittee on Grants-in-Aid made awards, totaling approximately $24,000, to 74 applicants from among the 86 applications received during the past year. Fifty-one medical schools were the recipients of assistance for research projects from among a group of 54 institutions receiving grants. The subcommittee's records reveal that 41 research projects, which had received grants prior to this 12-month period, were the subject of articles published in scientific periodicals.

Committee on Pesticides

This is the eighth annual report of the Committee on Pesticides. During the past year the following activities were engaged in by the Committee in furtherance of its study program on the health hazards of pesticides.

Educational Activities: The series of Committee reports reviewing medical and public health aspects of pesticidal chemicals has been extended to 22 with the recent publication in THE JOURNAL of the report of the study of effects of DDT on human volunteers. Another report discussing the recurring problem of thallotoxicosis is presently awaiting publication. The Committee has recommended that a bound volume of these publications be presented to the libraries of medical schools and similar institutions.

Annual Meeting: The Committee held its annual meeting on March 20, 1957, at the headquarters of the American Medical Association. Current problems affecting the use of agricultural chemicals and pesticides used in the home were discussed. Certain of the more important topics considered and actions taken by the Committee are set forth.

Protection of animals, as well as plants, against insects by means of chemicals that are absorbed and translocated throughout the plant or animal making the host toxic or repellent to attacking pests was emphasized as a pesticide development of growing importance. The propriety of using systemic insect repellents to protect humans against mosquito attacks and insecticides in saltlicks to protect animals against insects was questioned by the Committee. It was agreed that a safe and effective method of internal protection against biting and other annoying insects has not been satisfactorily developed.

Although two organic phosphorus compounds are now commercially available as systemic plant protectants, toxicology considerations preclude their use for food crops or forage crops for livestock. It was concluded that while systemic insecticides offer a new approach, there appears to be no prospect that general control of insects will be practical or widespread in the near future.

Use of insecticides in quarantine have been reviewed. The present in-flight methods for eradicating insects were considered to be completely inadequate because no insecticides can be applied in large enough quantity without being hazardous to the occupants of the plane. It was felt that sanitation in and around international airports should be improved in order to maintain successful quarantine.

New chemicals for fly control were discussed in relation to the growing problem of insecticide resistance. Many insect vectors of disease have become resistant to the chlorinated hydrocarbon insecticides. In some areas, this resistance is sufficient to interfere with the control of malaria and other vector-borne diseases. The most promising substitutes for the chlorinated hydrocarbons are the organic phosphorus compounds. Concern was expressed, however, over the hazards of repeated exposure to formulations of organic phosphorus compounds.

Other topics considered by the Committee included the hazards of nicotine in agriculture, international specifications for pesticides, and the impact of new legislation on agricultural, chemical, and food industries.

Service Activities: The Committee on Pesticides collaborated with other groups and organizations during the past year on problems of mutual concern. It continues to cooperate with the Interdepartmental Committee on Pest Control. The Committee participated in the selection of several generic names for new pesticides during the past year. Through the Secretary it maintained its representation on the Sectional Committee on Common Names for Pest Control Chemicals (American Standards Association) and Liaison Panel of Food Protection Committee (National Research Council). The Secretary participated in symposiums on poisoning at annual meetings of the American Chemical Society and the American Medical Association, at which time data were presented on Committee studies on the incidence of pesticide injury.

At the request of the American Medical Association Law Department, representative state and federal legislation on pesticides were compiled for the current study of chemical labeling laws being conducted by the Committee on Toxicology. The compilation was obtained with the assistance of various state regulatory agencies and certain trade associations.

During the past year the Committee was asked by physicians and private agencies to consider and render opinions on a variety of medicoeconomic problems involving the hazardous potentialities of pesticides. The Committee was requested by a government agency to review the present status of vaporizing devices for insecticides. Cases of poisoning from the accidental ingestion of vaporizer pellets by children, agranulocytosis, other systemic injuries and possible chronic poisoning from continuous exposure to vaporizer fumes were compiled from Committee files. A request from industry to review and make recommendations on the occupational hazards of mercury fungicides is also under consideration. Dieldrin poisoning in public health workers, the hazards of arsenicals in medicated animal fields and pesticide food contaminants as possible carcinogens are also considered by the Committee.

Committee on Toxicology

This is the third annual report of the Committee on Toxicology. Following is a résumé of its more important activities and accomplishments during the past year.

Educational Activities: The series of Committee reports has been extended to nine with the publication of a status report on "Health Problems Occurring from Household Chemicals, Including Drugs." An additional report embodying Committee recommendations for first-aid measures for poisoning is awaiting publication.

Annual Meeting: The Committee held its annual meeting on March 21, 1957, at the headquarters of the American Medical Association. Current problems affecting the use of household and commercial chemicals were discussed. Certain of the more important topics considered and actions taken by the Committee are set forth.

The problem of rapidly identifying small quantities of unknown tablets and capsules in cases of poisoning was the first topic considered. A proposed scheme for identifying drugs by the color response spot testing method, that is, identification by color produced by the addition of a reagent to the unknown substance, was discussed. Due to variations in shades of colors produced and the lack of specificity, these tests were not considered sufficiently reliable for the projected method of drug identification.

The subcommittee on kerosene poisoning met with members of the petroleum industry and discussed means for improving safety education and handling of kerosene and other petroleum distillates. The group drafted the following recommendations for retail marketing: 1. Kerosene should be sold on a retail basis only in distinctive standardized-shaped metal containers; dealers should be instructed to refill only in the original containers; and containers for retail sales should be no larger than 2-gal. size for household use. 2. All containers should have spouts, lips, and handles which allow convenient use from the original container and make it difficult for small children to pour out the contents. 3. Insecticide and rodenticide containers should be designed with regard to safety. 4. Permanent labels should be used containing warnings as to toxicity and flammability. 5. The use of coloring agents is to be discouraged because a colored substance might be more likely to entice rather than discourage small children. Blue was suggested as the best color, should color be deemed necessary, for it would be less likely to be confused with palatable substances. 6. Dealers should be educated as to the toxicological hazards of kerosene and petroleum distillates and their responsibility to call the customers' attention to precautionary labels at the time of sale.

Educational measures for the prevention of kerosene poisoning were discussed. It was suggested that an industry committee be appointed to conduct pilot studies of educational methods and to explore the possibility of research grants for furthering the clinical investigation of the treatment of kerosene poisoning.

A progress report was also made on the joint study of the Committee on Toxicology, the American Academy of Pediatrics, and the American Public Health Association on clinical evaluation of methods of treatment for kerosene poisoning. The project's objective is to determine the best treatment for kerosene poisoning and to establish a general procedure for investigating treatments of other types of poisoning. A trial report form has been sent to a selected number of poison control centers, affiliated hospitals and medical centers. A procedure for recording these data on IBM cards and for analyzing and developing tables has been devised. It is hoped the study can eventually be broadened to include additional medical facilities throughout the country. A study of methods of chemical analysis of absorbed petroleum distillates is also being investigated.

The American Medical Association's Board of Trustees authorized the Committee on Toxicology to draft a model uniform chemical label law for the labeling of potentially harmful chemicals not now so regulated. The proposed law is intended to help reduce careless and ignorant handling and storage of chemicals in areas where control of exposure to these chemicals is not as efficient as in the manufacturing process. The Committee adopted certain provisions which have been submitted to the Law Department for drafting into a model law. The model law is to be presented at a legislative conference this autumn.

Service Activities: The Committee on Toxicology has collaborated with other groups and organizations during the past year. As a result of a meeting with industry, the Committee was recommended as an impartial body to undertake the formulation of a uniform act for the precautionary labeling of chemical products. A mandate to spearhead this project was received from the Board of Trustees last October. The first phase of this undertaking was recently completed with the announcement of the results of the survey of labeling statutes which was conducted with the aid of the Law Department. A full report of this study is to be published shortly.

Through the Secretary, representation is maintained on the Committee of the Chicago Poison Center, the Steering Committee for a National Clearing House for Poison Centers, the American Standard Association Z66 Committee on Hazards to Children, and the U. S. Food and Drug Administration's Committee on Adverse Reactions to Drugs. During the past year, the Secretary addressed the National Drug Trade Conference, the Canadian Medical Association, the American Association for the Advancement of Science, the American Chemical Society, American Pharmaceutical Association, New Jersey Safety Council, Toilet Goods Association, and seminars conducted by Ohio State University and the University of Chicago.

During the past year the Committee was asked by public and private agencies to consider and render opinions on a variety of problems involving the hazardous potentialities of chemicals. Several hundred inquiries on the health aspects and usefulness of pesticides were also answered by the Committee office. Assistance was provided various departments at headquarters in the preparation of Book Reviews, Queries and Minor Notes, reviewing manuscripts, and advertising on matters involving toxicology.

Committee on Cosmetics

This is the eighth annual report of the Committee on Cosmetics. During the past year, the Committee has continued to promote its educational program. It has concerned itself primarily with the accumulation, preparation, and dissemination of information pertinent to its major objectives, which are as follows: to promote a better understanding of the function, care, and significance of the normal skin, with special reference to the role of cosmetics and allied preparations; to assist in the acquisition of new knowledge concerning the relationship between cosmetics and the skin; to emphasize the serious psychological implications of these conditions characterized by temporary or permanent skin disfigurement; to provide the public with such information as will enable it to wisely select and intelligently use cosmetics; to stimulate increased cooperation between the health professions and the toilet goods industry in providing the public with safe, effective, ethically advertised products; and to supply available data from our files to authorized persons.

The dissemination of educational information is carried out mainly through reports, articles, and editorials published under its auspices in THE JOURNAL of the American Medical Association and in *Today's Health*. In the past year the following reports have been published in THE JOURNAL: "Clinical Appraisal of Dermatoses due to Cosmetics," by Dr. Carl T. Nelson; "Cutaneous Effects of Soaps and Synthetic Detergents," by Dr. Raymond R. Suskind; and "Action of Emollient Creams and Their Additives," by Dr. Irvin H. Blank. For the sixth year, a monthly series of educational articles on skin care and cosmetics was published in *Today's Health*. Reprints of published reports and articles are available on request.

The newest educational activity of the Committee is its sponsorship of a series of symposiums. At the invitation of the Medical Sciences Section of the American Association for the Advancement of Science, the Committee will present its third symposium, "The Human Integument—Normal and Abnormal," in December, 1957. This will be a two-day program with half-day sessions devoted to the protective function of the skin, circulation and vascular reactions, sebaceous gland secretion and pathogenetic factors in premalignant conditions and malignancies of the skin.

The interest among medical scientists in other countries in the Committee's activities has continued to increase. This has been the consequence of the publicity given the article "Organization and Functions of the Committee on Cosmetics of the American Medical Association," which appeared in the *Journal für Medizinische Kosmetik*. A paper on the same subject was read by Dr. Carl T. Nelson at the International Congress on Dermatology in Stockholm, Sweden, and the full text of the paper has been accepted for printing in the proceedings of the Congress.

As in other years, the Committee office has continued to serve as an information center and advisory board for members of the allied health professions, better business bureaus, government agencies, writers, radio and television networks, newspapers, magazines, and others.

The Committee is particularly indebted to the many consultants who have so willingly offered and rendered assistance in special problems during the past year.

Chemical Laboratory

That portion of the new program of the A. M. A. Chemical Laboratory concerned with development and publication of Tests and Assays monographs for new and nonofficial drugs was brought into full operation during this past year. A Tests and Assays monograph represents an expression of opinion as to what might constitute adequate tests and assays to serve as a reference guide to those interested in the identity and quality of a new and nonofficial drug. Arrangements were made to publish the completed monographs, developed in cooperation with the pharmaceutical firms, in the American Pharmaceutical Association's journal entitled *Drug Standards*. Monographs have been completed on benztropine methanesulfonate, butabarbital sodium, crotamiton, cyclizine, cyclizine hydrochloride, cyclizine lactate, diatrizoate sodium, ethinamate, ethopropazine hydrochloride, glucosulfone sodium, iophenoxic acid, meclizine hydrochloride, mephentermine, meprobamate, metaraminal bitartrate, methoxsalen, methscopolamine bromide, methscopolamine nitrate, nylidrin hydrochloride, oxtriphylline, pentolinium tartrate, pipradrol hydrochloride, pramoxine hydrochloride, primidone, propantheline bromide, thiazolsulfone, and warfarin sodium. Work was begun on 22 other new drugs.

An in vitro method was developed for the determination of the rate of release of the active constituent from sustained release medications using simulated gastric and intestinal fluids. A tablet disintegration apparatus was modified for this particular purpose and work completed on methods for determining the rate of release of amphetamine sulfate from sustained release capsules. A study was carried out on the precision and accuracy of measurements made with ultraviolet spectrophotometers. This was done to establish whether it is possible to set limits embracing the errors in spectrophotometry or whether the use of reference standards is necessary to get agreement between instruments of different laboratories.

A filing and coding system was developed for a library of ultraviolet and infrared absorption curves. There are now in this library several dozen curves of new drugs as well as many of the other ingredients used in drug formulation.

At the request of the Council on Foods and Nutrition an analysis of a commercial low-sodium milk product was carried out for sodium, potassium, calcium, phosphate, thiamine, riboflavin, protein, carbohydrate, fat, and ash contents. Laboratory tests were conducted to check the efficiency of and claims for several products to be advertised in A. M. A. journals. These included a urine pH indicator, urine protein test tablets and reagent strips and tablets for checking phosphatase serum levels. Tests were carried out at the request of the Bureau of Investigation to identify the components of tablets used for obesity, tablets used as a wart remedy, an ulcer preparation, and a liquid preparation for internal use claimed to be effective for several skin disorders.

In its advisory capacity to other departments in the American Medical Association, the laboratory has worked with and for the Editorial Department, Council on Drugs, Committee on Cosmetics, Committee on Toxicology, Council on Foods and Nutrition, Bureau of Investigation, Council on Medical Physics, A. M. A. Library, and Advertising Committee. This work included matters of nomenclature, classification and indexing, terminology, structural formula drawings, reviewing chemical articles and checking advertising claims in addition to actual laboratory work on their behalf.

Several technical books were reviewed for THE JOURNAL of the American Medical Association and many inquiries from the medical profession were answered on technical matters. Cooperative work and liaison has been maintained with outside agencies such as the pharmaceutical firms, United States Pharmacopeia, the American Pharmaceutical Association, and the Food and Drug Administration.

Bureau of Investigation

In recounting the activities engaged in by the Bureau of Investigation during the past year, the most significant new development deserves first mention. Two substances are in the forefront: one, royal jelly; the other a Dominican weed dubbed "Pega Palo," of dubious botanical lineage, but blessed with clever press-agentry from contributors to "scandal" magazines. In a relatively short span within the year itself, well over 100 inquiries on these preparations were received. Such a vigorous campaign was sure to attract the eye of government regulatory agencies. They have already reported fraud orders, in the case of the Post Office Department, and seizures, so far as the Food and Drug Administration is concerned, against both products.

The chief interest of those who utilize the facilities of the Bureau of Investigation, whether lay or professional persons, was still, by far, cancer "cures" and "treatments." The principal development in this field was the federal government's "all-out" campaign against Mr. Harry Hoxsey of Dallas, Texas, who still seems to be the most active in the field. Although the Food and Drug Administration was successful before a judge and a jury in a federal district court at Pittsburgh, it still found it necessary to invoke unusual powers under the law whereby it warned the public against Mr. Hoxsey and his worthless cancer treatment.

Others in the cancer field continue to flourish, except one very old timer, the Dr. Nichols Sanatorium at Savannah, Mo. These people, operating a large hospital, utilized an escharotic paste. The property was, however, recently sold to a religious order for a convent.

Some newcomers to the field of "patent medicines" are perhaps worthy of brief mention. Propadrine, recently released in low dosage for over-the-counter sale, became an overnight sensation (in advertising copy) as an appetite depressant in obesity remedies. An alleged lipotropic mixture of vitamins, minerals and a few other things, which, according to advertising, would ream out corroded arteries, a good deal like "Sani-Flush," accounted for a notable increase in interest in this category. A new remedy for ulcers, of European origin, caused a considerable flurry, partly because the material was available in Canada but not in the United States.

A good many inquiries were received in the area regarded by the Bureau as the practice of medicine by business corporations. These are the firms which advertise and sell treatments for epilepsy, arthritis and rheumatism, hernia, rectal disorders and prostatism. Greater activity on the part of state medical societies in this area might well clear up a rather sad situation. It seems that law enforcement agencies will do nothing until they are pressed by residents of the states in which this abuse continues.

Of interest, also, were further legislative activities in two states against naturopaths. Legislation was introduced in Florida to outlaw the cult after a thorough investigation revealing the essential fraudulence of naturopathy was reported on to the governor, who requested remedial legislation. The bill, as passed, abolished the naturopathic board, but was amended to permit those who had called themselves naturopaths for 15 years or longer to dispense drugs, and narcotics "in an emergency."

Utah defeated legislation proposed to permit naturopaths to perform minor surgery. The legislature apparently was impressed by documentary evidence that naturopaths have no schools. It is obvious that they have no training which would justify their performance of surgery or their use of drugs or narcotics, as apparently many of them do!

The bureau cooperated in these two instances by furnishing its information on the request of the medical societies of the states involved.

There continues in Maryland an effort on the part of a group catering to the lesser cultists to issue homeopathic licenses despite court decrees of injunction and threatened criminal prosecutions. This matter is still pending in the courts of Maryland. The legislature, however, has repealed that part of the medical practice act which provided for a separate homeopathic board to be designated by the Maryland State Homeopathic Medical Society.

During the year the Bureau, in cooperation with the Public Relations Department, produced a color sound slide-film entitled "Mechanical Quackery." On a single promotional broadside directed to state and local medical societies, the film has been shown 80 times. Since late April, the film has been shown to more than 3,600 people, and has been well received. Further promotional efforts to assure a wider distribution are contemplated.

Also authorized by the Board, but in the planning stage, is a sound slide-film on the subject of food faddism. This will be done in cooperation with the Council on Foods and Nutrition and the Public Relations Department.

The leaflet on "Mechanical Quackery" which was introduced last year has been quite successful and has been distributed rather widely. Two printings of 25,000 each are practically exhausted, and a third is now being ordered.

The day-to-day work of the Bureau in answering specific inquiries has shown an increase in volume. More than 4,200 letters were written in answer to inquiries on 6,100 subjects. Magazine feature writers and syndicated newspaper columnists have suggested to the public that the Bureau's facilities are available to them.

During the year the Director and the Administrative Assistant made over 50 appearances before medical societies, auxiliary groups, school, civic and church groups in a wide variety of places, and appeared on both radio and television programs in the continuing effort to expose quackery and to persuade people that there is no short-cut to health. Appearances before medical groups are intended to acquaint them with the nature of the Bureau's functions, its problems, and the effect of the propaganda effort on the public.

Again the Bureau cooperated with the Bureau of Exhibits in manning exhibits at state and health fairs in Minnesota, North Carolina, Ohio, and Oklahoma. It is estimated that many thousands of lay individuals had an opportunity to study the message of the exhibits on "Mechanical Quackery" and "The Modern Medicine Show."

The Director, as a member of the Committee on New or Unproved Methods of Treatment of the American Cancer Society, attended meetings of the committee in New York City and Atlanta. The committee succeeds the Committee on Cancer Diagnosis and Therapy of the National Research Council, now disbanded.

The Bureau continues its policy of active cooperation with law enforcement agencies, Better Business Bureaus, and state and local medical societies in furthering its program of exposure of the quacks, nostrum peddlers, cultists and faddists, whose profit motivation lacks any real concern whatever for the health and welfare of the public.

Council on Industrial Health

Personnel

The membership of the Council has remained unchanged since the last report. The position of Council Secretary, vacant since Dr. Peterson's untimely death in an airplane crash in September, 1955, was filled on July 16 by Dr. B. Dixon Holland. Mrs. Marjorie Grigsby, Staff Assistant for Workmen's Compensation, was transferred out of the Council staff in February to make her office with the staff of the Council on Medical Service and work as assistant to that Council's Acting Secretary, in his capacity as Secretary of the Board of Trustees Committee on Medical Rating of Physical Impairment. She continues available to help with A. M. A.'s problems and projects on workmen's compensation, in which the Council on Industrial Health still maintains an interest and concern and still has a committee active. Mr. Howard Schulz, industrial hygienist for 11 years with Abbott Laboratories, North Chicago, joined the staff in June to fill the position of Staff Assistant requested and authorized in the Council's 1957 budget. Mr. Clark Bridges, Acting Secretary between the time of Dr. Peterson's death and Dr. Holland's arrival, was named Assistant Secretary in June. He had been Staff Assistant for Industrial Hygiene.

Council Meetings and the Congress on Industrial Health

Three meetings of the Council were held during this period; namely, in Chicago in October, Los Angeles in February, and Chicago in April.

The Los Angeles meeting was held in conjunction with the seventeenth Annual Congress on Industrial Health, a well attended and very successful series of open meetings on vision in industry, health hazards of agricultural chemicals, new concepts in the management of burns, and new developments in hearing loss due to industrial noise. On this occasion, conferences designed to improve and support cooperative action were held with the chairmen of the state medical societies' committees on industrial health and with the officers and directors of the Industrial Medical Association.

Committee Activities

Committee on Interprofessional Relations and the Committee on Health Program for Hospital Personnel of A. H. A.: This is a joint Committee of the American Hospital Association and the American Medical Association, represented by the Council on Industrial Health, appointed to develop a guide on the establishment and operation of occupational health programs for hospital employee groups. The Committee drafted such a guide and copies were furnished to Council members for their comments and suggestions. The latter were incorporated into a new draft of the guide, copies of which were then furnished to the Council members and to the American Hospital Association. The American Hospital Association has officially approved this version. Meanwhile, the Council members, seeing the statement on the "Scope, Objectives, and Functions of Occupational Health Programs" adopted by the House of Delegates of A. M. A., have suggested certain minor changes in the guide to make it conform to this statement.

Committee on Industrial Nursing: The Committee held its first meeting in April and outlined its plan for making the valuable contribution it can and is expected to make toward the furtherance of occupational health. Some of the subjects proposed for committee consideration are professional supervision of industrial nurses by nonmedical personnel, maintenance of the confidential nature of medical records, proper medical supervision and standard procedures, and the professional liability status of industrial nurses.

Committee on Plant Hygiene Studies: This ad hoc committee prepared the report "The Survey of the Occupational Environment" and has been discharged. The report appeared in THE JOURNAL, Dec. 8, 1956, and has been reprinted in pamphlet form. It is believed that this report will be of great assistance to physicians who are involved in industrial work but who have felt themselves unqualified to make competent industrial health and hygiene surveys of the industry they serve.

Committee on Health Education in Industry: This Committee held its organization meeting in April. The Committee decided that an early activity would be to collect and evaluate a significant amount of the health educational material being used in industry to determine if there are any particular areas or fields which need development of educational material.

Committee on Industrial Health Defense: This Committee is on a stand-by basis, consisting only of its chairman, Dr. Norvin C. Kiefer. He has been asked to formulate and discuss with the Council Chairman and Secretary and the Chairman of the Committee on Public Services his views and recommendations on the need for the Committee and what activities it should undertake and how and when. Meanwhile, the Council Secretary has maintained liaison with the Secretary of the Council on National Defense, which exercises cognizance for the A. M. A. over the broad field of disaster preparedness, etc. In this broad field falls the area of interest of the Committee on Industrial Health Defense of the Council of Industrial Health.

Committee on Medical Care for Industrial Workers: This is a joint Committee of the Council on Medical Service and the Council on Industrial Health. The Committee concerned itself mainly with the problems in relationships between the medical profession and the United Mine Workers of America Welfare and Retirement Fund. (These problems are described and their background given in the below mentioned "Suggested Guides to Relationships Between Medical Societies and the United Mine Workers of America Welfare and Retirement Fund.") In its last report, the Committee noted with some satisfaction that progress in resolving these problems had been made, particularly in Pennsylvania through the agreement between that state's society and the Fund, and that similar progress could be expected elsewhere. The action of the Pennsylvania State Medical Society terminating its contract was quickly followed by a number of resolutions by county societies in that state and in several others in favor of free choice of physician and fee-for-service method of payment to physicians serving Fund beneficiaries. Furthermore, negotiations begun in other states seeking agreements similar to that concluded in Pennsylvania were discontinued.

The Committee received requests from several states and the Executive Medical Officer of the Fund to intercede in some of these situations and to bring its good offices to bear in resolving various disputes.

On March 21, 1957, the Committee met in Chicago to hear reports from representatives of the states of Colorado, Illinois, and Pennsylvania with regard to developments in those states and to invite suggestions for settling the existing controversy, an account of which is given in the "Guides" mentioned below. On the following day the Committee proceeded to develop a draft of "Suggested Guides to Relationships Between Medical Societies and the United Mine Workers of America Welfare and Retirement Fund." In the drafting of the Guides and their further processing, the Executive Medical Officer of the Fund took no part, feeling that although he was a member of the Committee his presence might be embarrassing to the Committee. The Committee met again on April 12 to complete its draft, and then on April 14 met with the Council on Medical Service and the Council on Industrial Health to acquaint members of those Councils with the situation and with the Guides intended to meet the situation.

With some minor modifications, the Guides as submitted were approved by the two Councils and transmitted to the Board of Trustees for its action. The Board referred the Suggested Guides to the House of Delegates on June 4 at the Annual Meeting in New York. On June 6 the House of Delegates adopted the Guides with three amendments as suggested by the Reference Committee on Miscellaneous Business. (They have since been published in the House Proceedings in the July 6, 1957, issue of THE JOURNAL, pages 1113-1115.) The American Medical Association has since been informed by the Executive Medical Officer of the Fund that he finds the Guides unacceptable to the Fund, as they include several provisions unsatisfactory to him. The Committee believes that the Guides would help the medical profession and the Fund to resolve their differences if each followed them. The Committee has accepted the responsibility delegated to it by the House of Delegates (*J. A. M. A.*, July 9, 1955, pages 842-843) in designating itself as the appeal body to which either a state medical society liaison committee or the Fund may refer unresolved disputes.

In June, 1956, the Colorado State Medical Society introduced resolution 24 before the House of Delegates requesting that the "Guiding Principles for Evaluating Management and *Union Health Centers*" be changed to conform to the Principles of Medical Ethics. The Committee deferred action on any revision, since the Principles of Medical Ethics were in the process of revision. On June 4, 1957, the Committee met in New York and invited representatives of the Colorado State Medical Society to state their specific objections to these "Guiding Principles" and propose whatever changes they consider advisable. Dr. Kenneth Sawyer, representing the state society, suggested two deletions and one addition. The Committee accepted the suggestions for deletion of one sentence and part of another sentence. It felt, however, that it could not accept the suggestion to add a paragraph dealing with an aspect of the financing of health center plans inasmuch as it was not applicable to the "Guiding Principles." In addition, the Committee voted to change the name of this document to read simply, "Guides for Evaluation of Management and Union Health Centers." The Committee's recommendations to revise the publication have been forwarded to the two Councils for their approval. The Guides as approved will be presented to the House of Delegates for action.

During the past year, the Committee issued the proceedings of the Conference it had sponsored at the 16th Annual Congress on Industrial Health on the subject of work absence. The publication, "Absence from Work due to Nonoccupational Illness and Injury," has received wide acceptance among the medical profession, industry, labor, and educational groups. It gives a needed review of the problem of work absence and points up a number of areas requiring additional research. In response to one of the recommendations of the Conference, the Committee is engaged in the preparation of "A Guide for Measuring Work Absence due to Illness and Injury," which will recommend the adoption of uniform definitions and formulas for defining and measuring nonoccupational work absence.

The Committee has also projected for future activity the compilation of case studies of about 25 additional union health centers which are in operation throughout the country. It hopes eventually to prepare a booklet describing all such centers as it has already described 17.

The Committee voted to make a study of executive health examination programs in various industries, subject to the approval of the Councils on Medical Service and Industrial Health. This area of study is of particular interest in view of the attention and publicity being given this aspect of occupational health and since such programs appear to be of interest to both Councils.

Committee on Medical Education and Training: This Committee has continued its efforts for the improvement and extension of the teaching of occupational medicine at the undergraduate, graduate, and postgraduate levels. It was instrumental in organizing, and its chairman presided over, a meeting held in Chicago in September of leaders in the teaching and practice of preventive and occupational medicine, to discuss the establishment and the conduct of refresher courses to prepare physicians for examination for certification in occupational medicine. It was decided at this meeting that there should be developed and sent to physicians eligible for Board examination in occupational medicine a questionnaire to determine what sort of and length of refresher course they would be interested in taking and when and where they would prefer to take it. The results of this questionnaire were analyzed and reported to the Council and to all who attended the September meeting. These results, as well as the discussions at the meeting, are expected to prove of value in guiding the planning, staffing, scheduling, and conduct of these refresher courses.

Joint Conference with Chairmen of State Medical Society Committees on Industrial Health: The Chairman of the Joint Conference has directed a letter to each state chairman urging him to be prepared to report on his plans, activities, and accomplishments at the meeting of the state chairmen with the Council on Industrial Health on the occasion of the 18th Annual Congress on Industrial Health in Milwaukee, January, 1958. A letter is being developed in cooperation with Dr. Wells to be sent to each state chairman urging an improvement in the relations and cooperation between him and the District Counselor of the Industrial Medical Association in his area. Reference to the Conference is also made in the Council Meetings section of this report.

Committee on Scientific Development: The Committee on Scientific Development continues to maintain a careful surveillance of the industrial noise and loss of hearing problem through liaison with the Research Committee of the American Academy of Ophthalmology and Otolaryngology. The Council aided materially in promoting wide distribution of the research group's latest publication, "Guide for Conservation of Hearing in Noise."

Committee on Occupational Cancer: This Committee is still at work on two projects: (1) occupational and environmental cancer of the skin, and (2) means of determining inordinate risks to cancer among certain populations.

Committee on Medical Examinations: The report, "Guiding Principles of Medical Examinations in Industry," was published in The Journal, July 7, 1956. The report was reprinted in pamphlet form as it fills a very important need for guidance as to the extent and purpose of physical examinations in industry. An important sidelight on this publication is that the President's Committee on Employment of the Physically Handicapped ordered 10,000 copies for distribution to physicians throughout the country in an effort to encourage physicians to make physical examinations for proper placement of workers rather than simply for acceptance or rejection. This Committee has now been discharged.

Committee on Occupational Dermatoses: This Committee is following a plan to rotate its membership. In the integrated series of papers being prepared, four are in final state and just about ready for publication, as follows: "An Introduction to Occupational Dermatitis," "Causes and Predisposing Factors" (of occupational dermatitis), "Problem of Prolonged and Recurrent Occupational Dermatitis," and "Medicolegal Aspects of Occupational Dermatitis."

Committee on Industrial Ophthalmology: The first meeting of this Committee was held in June. The Committee took under consideration several problems such as the use of neutralizing chemicals as a substitute for water in the first-aid treatment of chemical injuries to the eye; a compensation award for conjunctivitis allegedly caused by safety goggles; vision testing charts, screening tests for glaucoma; and promotion of uniform acceptance by the various state workmen's compensation boards of the A. M. A. publication, "Estimation of Loss of Visual Efficiency," as the standard method of determining visual losses.

Other Council Activities and Plans

Statement on "Scope, Objectives, and Functions of Occupational Health Programs": The greatest and most far-reaching accomplishment of the Council during this period was the development of a statement on the "Scope, Objectives, and Functions of Occupational Health Programs." The Council's earlier statement on this subject, entitled "Guiding Principles of Occupational Medicine," which had been developed by a committee and released in 1954, had never been adopted by the House of Delegates or promulgated as an official A. M. A. policy statement, although it had been approved by the Judicial Council. It was distributed to the several state medical societies with the recommendation that they adopt and promulgate it officially. However, few did so. Some state societies are reported to have discounted this document and declined to be guided by it when confronted by disagreements between their members over what occupational health programs should encompass. The Council, therefore, found an authoritative official A. M. A. policy statement on this subject to be needed and drafted one which was approved by the House of Delegates, and published in the July 6, 1957, issue of THE JOURNAL in the Proceedings of the House, with these words of commendation from the Reference Committee: "It is the unanimous opinion of your reference committee that the House has before it a statement which for the first time clearly defines the scope, objectives, and functions of occupational health programs. It marks the needs and boundaries of occupational medicine. It states in a positive fashion the proper place of occupational health programs in the practice of medicine, and it clearly charts the pathways of communication between physicians in occupational health programs and physicians in the private practice of medicine."

It is planned to have this statement published in reprint form for wide distribution through medical channels and official and voluntary health agencies. Many requests for it have already been received.

"Primer" for Occupational Health Programs: The Council frequently receives requests for help and guidance from physicians contemplating the establishment of occupational health programs. To meet such requests, the Council is developing a primer on the organization of occupational health programs to set forth briefly the essential points and to quote, paraphrase, and list pertinent Council publications. This primer and the publications listed in its bibliography and other appropriate publications of the Council will be sent as a "package" to the inquiring physician.

Council Exhibits: The Council created an easily transportable exhibit of its available publications and displayed it at its annual meeting in Los Angeles in February and at the joint meeting of industrial physicians, industrial hygienists, and industrial nurses in St. Louis in April. The response was most gratifying. The important publications in the industrial health and hygiene field are now to a greater extent getting into the hands of those who need them

Joint Activities with Other A. M. A. Councils

The A. M. A. has for some years been concerned as to the adequacy of regulations and laws for the labeling of certain toxic materials. This interest has been centered in the Committee on Toxicology of the Council on Drugs. However, the labeling of toxic materials used in industry has long been a concern of the Council on Industrial Health. It is felt that the Council on Industrial Health might well work with the Committee on Toxicology for the adequate handling and coordination of A. M. A.'s interest in this area, and this has been recommended to the Board, and approved.

The Council on Industrial Health and the Council on Medical Service met together after meeting separately in April. Present, in addition to the two Councils, were the A. M. A.'s Secretary-General Manager, Assistant Secretary, and the Chairman and Research Assistant of the Committee on Medical Care for Industrial Workers. Matters considered included the draft of the above-mentioned statement on the "Scope, Objectives, and Functions of Occupational Health Programs"; the activities, accomplishments, and plans of the Committee on Medical Care for Industrial Workers; the role of the general practitioner in health maintenance; industrial executive health examinations; workmen's compensation; and trailer services operating throughout the country to perform periodic physical examinations of a plant's employees supplementary to the plant's own occupational health program, diagnostic examinations for personal health purposes of union members supplementary to services provided in union health centers, and screening examinations supplementary to services provided by official public health agencies.

The Council on Industrial Health and the Council on Mental Health have long recognized the need for more intensive joint action by them for the promotion of mental health in industry and agreed that perhaps they should form a joint committee to this end. Negotiations looking to the formation of this committee were interrupted by the death of the Secretary of the Council on Industrial Health and by the pressure of other business before the Councils, but it is planned to renew them within the next few months.

The Council on Industrial Health recognizes that problems relating to the health hazards of certain farming jobs are of concern to the Council on Rural Health and further recognizes that there is an overlapping field of interest. The Council on Industrial Health is contemplating a proposal of joint action on the part of the two Councils.

Liaison with Other Societies, Associations, and Groups

The Council has its Assistant Secretary serving as Secretary of the Board of Trustees' Committee on Medical Aspects of Automobile Injuries and Deaths and is represented on the Board's Committee on Medical Rating of Physical Impairment and Committee on Rehabilitation. While the interests and activities of these three committees fall to some extent within the areas of cognizance of several A. M. A. councils and departments, they are areas of great importance to the Council on Industrial Health. This fact helps justify the great amount of time that working with these committees requires of the Council's staff, particularly the Assistant Secretary and a stenographer. The Council continues to coöperate with many associations which have interests in occupational health.

Miscellaneous Council Activities

The House of Delegates, at its November, 1956, meeting, adopted the recommendations of the Reference Committee with respect to the Council's last annual report, that the Council not form its own committee on heart disease in industry or its own committee on neurological disorders in industry, but rather establish and maintain liaison with voluntary health agencies operating in these areas. Accordingly, the Council requested through the A. M. A. Secretary's Office that the American Heart Association be asked to invite such liaison from the side of the A. M. A. This request was implemented, and resulted in the assignment as liaison agent of Dr. Sander, a member of the Council and a member of A. M. A.'s Committee on Rehabilitation and Committee on Medical Rating of Physical Impairment. This is a fortunate assignment, inasmuch as this Council and these Committees have cognizance of those aspects of the employment of cardiacs of concern to the A. M. A.

Council on National Defense

This report covers the activities of the Council on National Defense from July 1, 1956, to June 30, 1957.

Meetings and Administrative Actions

During the period covered by this report, the Council and its two committees held two regular meetings; the first in Washington, D. C., on Oct. 25-26, 1956, and the second meeting in Chicago on April 6-7, 1957. The first day of these two-day meetings was devoted to separate meetings of the Committee on Civil Defense and the Committee on Military Medical Affairs. On the second day, the Council met to act upon reports of the committees and to otherwise conduct the affairs of the Council. One special meeting of the Council was held in Chicago on Sunday, Jan. 27, 1957, to consider a request from the Federal Civil Defense Administration for the Association to undertake a study and research program with respect to medical and health aspects of civil defense.

In addition to the above meetings, the Executive Committee of the Council met during the Association's 1956 Clinical Session in Seattle and its 1957 Annual Meeting in New York City. During the reporting year, Council and Committee members, including the Secretary of the Council, participated in a number of meetings dealing with military medical and civil defense subjects with federal agencies, medical societies, and various allied medical and health groups.

The full Council will continue to meet in Chicago twice a year for a one-day Sunday meeting to review and act upon written reports of the committees and to conduct such other affairs of the Council as are required.

Future meetings of the Committee on Military Medical Affairs will be held in Washington, D. C., twice a year prior to the regularly scheduled meetings of the Council. This will permit that Committee to have the advice of the senior military leaders of the medical services and the required liaison which should be maintained by the Committee with he several federal departments and agencies.

The Committee on Civil Defense will schedule its future meetings also in advance of the Council meetings in various sections of the country. The first of these meetings will be held in each of the seven Federal Civil Defense Regions. There is a definite need for better coordination of medical civil defense activities and an exchange of information beween national, state, and local groups. This new meeting arrangement will permit that Committee to assemble representatives of the state medical societies, woman's auxiliaries o the state societies, and other local representatives to receive and exchange first-hand reports concerning regional and state activities in the medical civil defense field. It will provide a practical approach to the solution of the many complex problems of emergency medical services through he combined efforts of regional and local groups. The next meeting of the Committee will be held in FCDA Region III, composed of the states of Florida, Mississippi, Alabama, Georgia, South Carolina, North Carolina, and Tennessee. It s scheduled for Oct. 5-6 in Atlanta, Ga., and invited guests nclude the state executive secretaries, chairmen of the state emergency medical service committees, chairmen of state civil defense committes of the Woman's Auxiliary, and regional FCDA medical officers.

Military Medical Activities

Although recent changes in the international situation, on he surface, appear to warrant some decrease in mobilization strength, there has been no lessening of activities in the field of military medical and related matters. In spite of the good results achieved in the program to attract and retain physicians for a military medical career through adoption of various administrative and legislative measures recommended and supported by the Council and the Association, other problems continue to develop which could readily reduce the effectiveness of the career incentive measures, create an imbalance between the medical needs of the civilian population and the armed forces, or result in less than full utilization of medical personnel in providing the best possible medical care for members of the armed forces. The Council and its Committee on Military Medical Affairs have consistently supported the cooperative efforts and programs of the medical services of the Department of Defense, the several military departments, and the U. S. Public Health Service in keeping with the Association's stated position of full recognition in he necessity of providing the best medical care for members of the armed forces at all times.

The Council has continued to be most active in considerng the various problems and programs dealing with military medical planning. It has considered their effect and impact on the medical profession, military and civilian, and has brought to the attention of government officials the need for civilian medical advice and counsel at the highest level of he national defense departments. A brief review of some of hese activities is herewith reported.

Legislation to Succeed "Doctor-Draft" Act

In October, 1956, the Council reviewed the "Doctor-Draft" law and its implications. It reported to the Board hat "there is no more necessity and less justification than wo years ago for the extension of this discriminatory legislation." At that time, representatives of the Department of Defense advised the Council that an extension of the "Doctor-Draft" act would not be requested. The Department of Defense further advised it had submitted proposed legislation which, if enacted, would amend the basic Universal Military Training and Service Act to provide for the selective call-up of physicians, liable for induction under the regular draft, up to age 35 if deferred to complete their medical education.

In reviewing the proposed legislation, the Council suggested that the words "allied specialists" be changed to "other specialists" in order to provide a broader coverage and authority for call-up of other than allied medical categories as, for instance, in the case of scientists. The Council noted the proposed legislation did not provide for the continuation of the National Advisory Committee, including state and local volunteer committees, to the Selective Service System with respect to the selection of medical, dental, and allied specialists categories. In November, 1956, the Council recommended to the Board that in any A. M. A. testimony on the proposed legislation before the Congress a statement be included to request the continuation of the National Advisory Committee.

On April 1, 1957, H. R. 6548 was introduced to provide for the call-up of physicians and others after June 30, 1957, the date of expiration of the "Doctor-Draft" act.

Again in April, 1957, the Council advised the Board with respect to H. R. 6548 and reiterated its recommendations on the subject. The Board adopted these recommendations and the Chairman of the Council testified, on behalf of the Association, at hearings before the House Armed Services Committee on May 8, 1957, and before the Senate Armed Services Committee on June 6, 1957.

That legislation was enacted as Public Law 85-62, 85th Congress, June 25, 1957. Briefly, it provides that individuals registered under the general draft act and deferred from induction for the purpose of medical or dental training will be subject to induction upon the completion of their professional training. If they are deferred past age 26, they will continue liable for induction up to age 35 under the provisions applicable to all regular registrants. Certain beneficial provisions, such as the special pay for physicians, interservice transfer of medical officers, opportunity to resign reserve commissions, volunteer for service, and appointment to rank commensurate with professional education and ability, were continued under the new law as a necessary part of administering a special program for calls for medical and dental personnel.

The Council wishes to call special attention to the results of the efforts of the Association regarding the National Advisory Committee which, under Section 3 of P. L. 85-62, was continued. The Department of Defense legislation proposal, as originally submitted, did not provide for the continuation of the advisory committees. In its report accompanying H. R. 6548, the House Committee said: "The American Medical Association strongly recommended that the National Advisory Committee and the local and state committees be continued and the Committee on Armed Services concurs in the views of the American Medical Association. Therefore, the proposed legislation contains an amendment which will continue these committees in effect as they have been in the past."

Action to Eliminate Military Veterinary Corps

In May, 1957, the Council informed the Board that the Department of Defense was seeking legislation designed to abolish the military veterinary corps. A year earlier, the Council had recommended the Board oppose any action to eliminate the corps and in June, 1956, the House of Delegates voted to oppose the elimination of military veterinarians and recommended that a copy of its action be sent to the President, members of Congress, the Secretary of Defense, and surgeons general of the military services.

In May, 1957, the Council recommended to the Board that it reiterate and reaffirm the A. M. A. position of active opposition to the elimination of the veterinary corps. The Board adopted the recommendation.

Dual Vulnerability of Federal Employees

The Council informed the Board in November, 1956, that the status of federal governmental employees, who are in essential positions in time of national emergency and who also hold military reserve commissions, was the subject of high level governmental conferences as to a priority predetermination of dual vulnerability. For example, a number of key medical personnel are currently in the employ of the Veterans Administration. They also hold reserve commissions and some have mobilization assignments. The Office of Defense Mobilization has appointed a committee to study this problem as it affects these federal employees.

The Council is not aware of any plans to extend the study to include key personnel employed in nongovernmental positions. However, it feels this phase of the problem should also be reviewed. It recommended to the Board that it express its interest and concern to the Office of Defense Mobilization on this important subject with the hope that an early decision could be reached. The Office of Defense Mobilization should also be requested to include pertinent nongovernmental positions in its study. The Board approved these recommendations.

Legislation to Elevate Rank of Surgeons General

At its April, 1957, meeting, the Council considered two bills, S. 1093 and H. R. 914, which provide for the elevation in rank of the surgeon general and the judge advocate general in the Army, Navy, and Air Force. The Council noted that the proposed action would have the effect of correcting the inequality in compensation between the Surgeon General of the U. S. Public Health Service and the surgeons general of the military services; further, that it would give proper recognition to the increased responsibilities and functions of military medicine in the same manner that increased rank has been given to line and staff positions of other arms and services. In view of these facts, the Council recommended that the Board support these measures by sending appropriate letters to the chairmen of the Senate and House Armed Services Committees. The recommendation is in accord with the action taken by the House of Delegates in June, 1948, not changed at this time, when it adopted a resolution urging that immediate steps be taken to advance the rank of the military surgeons general.

The Board approved this recommendation and appropriate letters on the subject were sent to the Senate and House Armed Services Committees.

Change in Physician-Troop Ratio

In May, 1957, the Council reported to the Board that the Health Resources Advisory Committee to the Office of Defense Mobilization had informed the Department of Defense it would register no objection to an increase from 3 to 3.4 physicians per 1,000 troop strength in fiscal year 1958. In view of recent streamlined reorganization programs of the military services, anticipated reduction in over-all troop strength, and the operation of the Medicare program which should result in a reduction in the workload of medical officers, the Council reported that it felt such an increase was not justifiable and warranted and that the Board should question any such increase in the physician-troop ratio and recommended that the Assistant Secretary of Defense (Health and Medical) should be advised accordingly. The Board approved and adopted the Council recommendation.

Other Military Subjects Reviewed by the Council

At its April, 1957, meeting, the Council reviewed H. R. 3516, a bill to authorize the Walter Reed Army Institute of Research to award certain degrees in medicine, dentistry, veterinary medicine, and in the biological sciences involved in health services. It also reviewed a bill, H. R. 564, to provide scholarship grants for medical education. The Council supported the action of the Committee on Legislation and the Council on Medical Education and Hospitals recommending opposition to both bills and recommended to the Board of Trustees that the Association actively oppose these measures.

The Council advised the Board on May 9, 1957, of its concern with the pay scale recommendations and proposals of a special committee, known as the Cordiner Study Committee, reporting to the Department of Defense on a program to attract and retain technical and skilled military personnel. The Council believes that, should some of the recommendations in the report be adopted, it would reduce certain incentive pay provisions now authorized under the career incentive program for medical officers and would have the effect of destroying this program designed to preserve, strengthen and maintain the prestige of military medicine. The Council has requested the Committee on Military Medical Affairs to continue to follow this matter and to make a further report at a later date.

Survey of Discharged Medical Personnel

The Council has continued to conduct an opinion survey among physicians being released from active military service to obtain information on the utilization of physicians and medical staffing conditions in the armed forces. From June, 1952, to July, 1957, the Council has distributed 19,658 questionnaires, of which 13,235 were filled out and returned. Summary results of the survey are periodically compiled and published in THE JOURNAL, and copies of the reports are sent to the military departments.

Placement Assistance

Another continuing program operated by the Council assists physicians being released from active military service by providing information on available civilian medical opportunities. This program has been well received by the participating physicians. Up to July, 1957, the Council has sent letters outlining the program to 16,059 physicians and received 4,502 replies, of which 3,009 were from physicians who requested and were given placement assistance.

The Council has also continued to assist state volunteer medical advisory committees to the Selective Service System in replacing deferred physicians who have a military obligation.

Liaison with Physicians on Active Military Duty

Since January, 1954, the Council has prepared a monthly article for publication in the *United States Armed Forces Medical Journal.* This activity was undertaken to establish and maintain liaison between the Association and physicians in uniform. In this reporting period, these articles have covered such subjects as summaries of survey reports of physicians leaving military service, responsibilities and activities of A. M. A. councils and the American Medical Education Foundation, reports on military medical bills of the 84th Congress, medical professional liability, and the operation of the Medicare program.

Medical Civil Defense Activities

In the interest of national survival in time of emergency, every resource of the nation must be available for use as required, for either military or essential civilian use. Civil defense is the responsibility and business of every citizen. The individual kept properly informed and trained does what he can for himself in an emergency, while also contributing to the organized community effort. In turn, communities work and pull together to overcome their own crisis with outside help furnished under prearranged plans.

The medical profession naturally views civil defense from the standpoint of the medical and health care of the civilian population under disaster conditions. The American Medical Association has expressed the conviction that the Association should concentrate its efforts to the medical aspects of civil defense.

The Council's Committee on Civil Defense has been primarily concerned with problems in this category, such as emergency medical and health service, the organization and training of professional personnel for the management and care of mass casualties, and the provision of adequate medical supplies, equipment, and facilities.

Civil defense will never be perfect. It needs to be tested, refined, and retested until it is made a strong and effective as possible. Survival of the nation depends upon the ability and willingness of the medical profession to preplan, organize, and achieve emergency medical disaster readiness.

The Council and its Committee on Civil Defense have maintained close and effective liaison with the FCDA, and particularly its health office, with state and constituent medical societies, and with national allied medical and health groups. Maximum use of the facilities and prestige of the Association has been made to encourage interest and participation in medical civil defense affairs. Some of the activities of the Council and its Committee on Civil Defense are hereinafter reviewed.

Medical Civil Defense Activities of Federal Government

At its meeting on Oct. 25, 1956, the Committee on Civil Defense received status reports of medical civil defense activities of the three military services, National Research Council, Office of Defense Mobilization, Atomic Energy Commission, Department of Agriculture, U. S. Public Health Service, Department of Health, Education and Welfare, Veterans Administration, and the Federal Civil Defense Administration.

The Council is encouraged and gratified to report that considerable progress is being made in the various cooperative programs and plans of the federal agencies and professional associations. The Council recommended, and the Board approved, that the military departments be requested to assist and actively participate in medical civil defense matters by including appropriate projects in their training programs, reserve affairs, and educational projects. Such activities are now being incorporated in the military programs and the role of the armed forces in civil defense operations is receiving attention and study.

Another most encouraging matter is the serious attention which has been given to civil defense by the Congress. More bills have been introduced in the Congress on civil defense during this reporting period than at any other time in our history. All of these measures are designed to reorganize and reconstitute the civil defense program of the federal government. In general, they would provide greater authority, responsibility, and participation in civil defense at the national level.

At hearings before the Military Operations Subcommittee of the House Committee on Government Operations on one of these bills, H. R. 2125, the Chairman of the Council's Committee on Civil Defense, on behalf of the Association, testified "the Association does believe that a strong civil defense requires positive action by the federal government with emphasis on increased federal leadership and direction. We believe that civil defense is an integral part of national defense and that the federal government has a direct responsibility, whether it is administered jointly with the states or with the states in a supporting role."

Special Committees on Allied Medical Training and Specialized Practice

Two special committees were set up to (*a*) consider the special medical training of professional groups (physicians, dentists, veterinarians, nurses, etc.) and (*b*) obtain information from the various medical specialty groups on how to best care for mass casualties requiring special techniques and unique procedures of qualified specialists.

The special committee charged with assignment (*a*) above met in September, 1956, with representatives of the American Dental Association, American Nurses' Association, American Veterinary Medical Association, National League for Nursing, and the health office of the Federal Civil Defense Administration and, as a result, prepared a priority listing of emergency and lifesaving procedures each group could reasonably be expected to perform under an emergency "expanded services" concept.

The other special committee contacted the 19 medical specialty groups requesting that they assist in the preparation and compilation of training guides and other instructional material and to make such other suggestions concerning their contribution for an appropriate civil defense program. Replies were received from 16 of the 19 specialty groups expressing interest and a willingness to assist and cooperate on the project.

Shortly thereafter, negotiations were started between the FCDA and the A. M. A. to have the A. M. A. undertake a comprehensive research and study project dealing with the medical and health care of the surviving population, casualty and noncasualty, following an all-out attack upon this country. Since the work of the two special committees is a part of the study project to be undertaken, it will be coordinated by the continuation of the work of these committees or otherwise included as a part of the program plan of the research and study project.

Request for A. M. A. Position on Shelter Program

One of the sections of H. R. 2125, a bill to reorganize the civil defense functions of the federal government, authorizes the preparation and execution of a national plan to provide for "shelter of the civilian population against primary and secondary effects of nuclear explosions." The chairman of the House subcommittee conducting hearings on that bill indicated that the A. M. A. should express its position with respect to a "shelter program," inasmuch as the Association is composed of individuals who understand and appreciate the hazards and effects of radiation exposure. He requested a statement from the Association on the subject.

In April, 1957, the Council and the Committee approved a statement and requested the Board of Trustees to adopt it and forward a copy to the House Subcommittee on Military Operations. Upon adoption by the Board, the following statement was referred as recommended:

"The American Medical Association is gravely concerned with the possibility of large numbers of casualties following a nuclear or thermonuclear attack. The Association favors any and all reasonable measures that will prevent and minimize casualties. Introduction of large yield weapons have added a new dimension, radioactivity, to previous hazards. After detonation of large thermonuclear devices, there may be serious effects of radioactive fallout which may extend over wide areas. Adequate shielding has been shown to be an effective means of protecting personnel from the hazards of radiation. As physicians, we favor means that will protect personnel from the effects of radiation, to the extent possible. There has been conflicting testimony regarding placement, types, construction, weapons effects, degree of protection, the costs of shelters; problems beyond the competency of the medical profession to pass judgment. Within the capabilities of warning time, skillful engineering design, strategic location, and financial limitations, the American Medical Association recommends consideration and implementation be given the fullest possible employment of shielding for the protection of personnel as an essential element of civil defense."

Legislation to Amend the Federal Civil Defense Act of 1950

At its meeting in April, 1957, the Committee reviewed H. R. 4910, an Administration bill to reorganize the FCDA, so as to vest civil defense responsibility jointly in the federal government and the several states. In addition, several other bills of a similar nature and purpose were considered. The Committee and Council recommended to the Board that should the Association be called upon to comment or testify on these bills, the A. M. A. position as presented on March 7, 1957, at hearings on H. R. 2125 be used as the basis for statements of policy of the Association concerning civil defense matters. The Board approved and adopted the recommendation.

A. M. A.-FCDA Research and Study Project

Following a request from the Federal Civil Defense Administration, the A. M. A. Board of Trustees on Feb. 9, 1957, authorized the Council to proceed with a research program and initiation of a plan of study to establish criteria for the provision of medical care of the surviving population, casualty and noncasualty, in the event of an enemy attack on this nation.

The development of a plan for the care of the surviving population and the problem of public health and environmental sanitation that will be present in the event of enemy attack on this nation is a tremendous project involving many varied and complex problems. The Association agreed to assume this unique and challenging task realizing that the medical profession and, more specifically, individual physicians would have the burden and final responsibility to fulfill the medical and health requirements in time of a grave national emergency.

The formal contract for this project was signed on July 26, 1957. It appears that the program will take from 12 to 15 months to complete and the cost, estimated at $150,000, will be financed by the Federal Civil Defense Administration. A special study committee, under the general direction of the Council, has been established to initiate, plan, and direct the project. This six-member committee is composed of Drs. Harold C. Lueth, of Evanston, Ill., and Carroll P. Hungate, of Kansas City, Mo., representing the Council on National Defense, and Drs. John F. Burton, of Oklahoma City, and Robert L. Novy, of Detroit, representing the Council on Medical Service. The other two physician members are to be selected from the geographical area in which the field study will be made. The FCDA, U. S. Public Health Service, and national health and medical associations will be requested to designate representatives to work on the project and to otherwise participate and assist the committee.

Following several preliminary meetings by staff and committee member personnel, a meeting of the committee was held on July 28, 1957, to consider the selection of a study site area, a briefing by the FCDA as to the scope and purpose of the project, and the selection of a full-time staff director for the committee.

The committee selected the St. Paul-Minneapolis site, indicating that a 100-150 mile radius in this area would be desirable as a representative area in which to conduct the study. It was felt that this noncoastal area would present a number of problems which would be found in other sections of the country and that the findings of the study would be of practical use and adaptation by other sections. The Minnesota State Medical Association has been informed of this action with the request that it be endorsed and approved. Assistance from the state association was also requested in the selection of two physicians from the area to be named to membership on the study committee.

The committee named Dr. Earle Standlee, of Dallas, Texas, as its staff director. He will report for duty in September. The committee plans to schedule an early meeting in Minneapolis of the full six-member committee. At that time, it will draw up an outline for the project and commence operation thereunder. Periodic status and progress reports on the project as received by the Council will be submitted to the Board of Trustees.

County Medical Societies Civil Defense Conference

On Nov. 10-11, 1956, in Chicago, 120 persons from 30 states participated in the seventh conference of the county medical societies civil defense organization. This yearly conference is sponsored by the Council, which provides staff and clerical assistance in making all arrangements for these meetings.

The conference, the most successful one to date, was designed to help local medical and health personnel plan their work in civil defense and disaster situations. In addition to panel discussions on planning, support, and resources for disaster situations and a symposium on the mental health problems and needs under such conditions, the participants divided into groups to consider problems based on preassumptions as to the extent and type of casualties and the available personnel, facilities, and supplies to manage and care for them.

This year the conference will be held in Chicago on Nov. 9-10, 1957.

National Medical Civil Defense Conference

On June 1, 1957, the Council sponsored its Fifth Annual National Medical Civil Defense Conference in New York City. The conference was attended by 276 persons from 36 states, Hawaii, and Canada. The program was devoted to the medical aspects of the hazards and effects of lethal radiation and radioactive fall-out. Dr. David B. Allman, the then President-elect, welcomed the conferees on behalf of the Association.

In 1955, the Board of Trustees requested the Council to secure from all sources as much data as possible on radioactive fallout for dissemination to the medical profession. In keeping with that request, this was the second conference which has been sponsored by the Council to feature radiation problems. It was the largest conference of this type held to date and it was scheduled at a time when national and international concern was being publicized on the controversy of radioactive fall-out. Sustained interest was maintained by the audience throughout the day.

Publication of All Other Medical Civil Defense Activities

The Council has continued its publication of a Civil Defense Review that is distributed bimonthly. This publication contains information on the latest civil defense developments and reading lists of selected material dealing with the medical aspects of civil defense. It is sent to over 1,400 persons and groups, including the chairmen and members of state emergency medical service committees.

During the reporting year, the Council published selected medical disaster preparedness plans and articles in The Journal and in other similar publications. It has continued to distribute informational material on the medical aspects of civil defense, medical planning for civil defense, and a bibliography of pamphlets and articles in this field.

Council on Scientific Assembly

This report includes a summary of acomplishments at various meetings of the Council on Scientific Assembly, reports of the Clinical Meeting in Seattle and the Annual Meeting in New York, and a report of the work which continues throughout the year on motion pictures and medical television.

Council Meetings

The Council on Scientific Assembly was increasingly active during the past year. In addition to seven full meetings of the Council held in Seattle, Chicago, New York, and Philadelphia, there were two conferences at which the Section secretaries and Section representatives to the Scientific Exhibits were guests of the Council, and two meetings where Council members were guests of the Section delegates. In the interim, the executive committee and subcommittees of the Council met from time to time.

Committee to Study Annual Meetings: The Council requested the Board of Trustees to appoint a committee to study the scientific activities at the Annual Meeting of the American Medical Association to determine if changes should be made in the program to be presented. This committee, composed of Hugh H. Hussey, M.D., Washington, D. C., chairman; Harlan English, M.D., Danville, Ill.; Stanley P. Reimann, M.D., Philadelphia; Harvey B. Stone, M.D., Baltimore; and Glen Shepherd, M.D., Chicago, met with the Council on Scientific Assembly. Numerous suggestions were made for consideration.

Sites for Annual and Clinical Meetings: The increasing difficulty of securing adequate meeting places for the American Medical Association, together with mounting costs, has been of considerable concern to the Council. The Council offered to advise the Board of Trustees on the availability and suitability of facilities in various cities where the Association might meet.

Goldberger Lecture: The policy of presenting the Goldberger Lecture at the Annual Meeting was established. The 1957 lecture was presented before the Section on Pediatrics.

Association for Research in Ophthalmology: The Council noted that the Association for Research in Ophthalmology has held its sessions during the Annual Meeting under the auspices of the Section on Ophthalmology, but separately from the Section. It was recommended that the two groups hold their sessions jointly, which would eliminate one meeting hall.

Recognition for Medal Awards in Scientific Exhibit: There was considerable discussion about the method of awarding medals in the Scientific Exhibit and ways in which more recognition could be given to this important feature.

National Science Fair: The Council noted with approval the interest shown in exhibits from the National Science Fair. A committee from the Council with representatives from California visited the National Science Fair in Los Angeles and selected four exhibits for commendation. Two of these were shown in the Scientific Exhibit at the Annual Meeting in New York under the sponsorship of the Department of Public Relations.

Death of Dr. Phifer: The Council has felt keenly the loss of Dr. Charles H. Phifer, whose long illness and death occurred during the year. He was the senior member of the Council and contributed a great deal of time and thought to its deliberations.

Section Officers: The Council approved the plans of several Sections for assistant secretaries and assistant representatives to the Scientific Exhibit.

Award to Medical Illustrators: The Council acknowledged the contributions which medical illustrators and biological photographers have been making to the Scientific Exhibit and voted to award certificates of merit for this work.

Programs for Annual and Clinical Meetings: The Council considered in great detail the types of program for the Seattle, New York, and Philadelphia meetings. In addition to extended discussions at the regular meetings of the Council, there were numerous conferences and much correspondence between meetings.

Seattle Clinical Meeting

An unusual degree of enthusiasm marked all activities of the Scientific Assembly at the 10th Clinical Meeting in Seattle. The entire scientific meeting was held in the Civic Auditorium, making it possible for physicians to go from panel discussions, to lectures, to color television, to motion pictures, and to demonstrations in the Scientific Exhibit with a minimum of delay. Various portions of the program progressed simultaneously and continuously with only a slight lessening of tempo during the noon hour.

There were 20 panel discussions and 46 lectures covering all phases of medicine. Moderators and participants were well versed in their particular subjects and included physicians not only from the Pacific Northwest but from many other parts of the country.

Color television, conducted in cooperation with Smith, Kline and French Laboratories, Philadelphia, originated at Doctors Hospital and was presented to capacity audiences in the Civic Auditorium. Two-way telephone conversations between the meeting room and the operating room were especially valuable contributions.

The motion picture program, from the viewpoint of sustained interest, was one of the most successful ever conducted at a meeting of the American Medical Association. Films were shown each afternoon during the week, with a total of 24 titles. In addition, films were shown one evening at the Olympic Hotel, the one on "The Medical Witness" (premiere showing), presented with the cooperation of The Wm. S. Merrell Company, Cincinnati, and the American Bar Association, requiring a second showing to accommodate the crowd. "Monganga," presented with the cooperation of Smith, Kline and French Laboratories, Philadelphia, also attracted a capacity audience.

The Scientific Exhibit featured demonstrations continuously in 98 exhibit booths. Outstanding interest was evinced in a special exhibit on the history of medicine in the Pacific Northwest under the direction of Dr. Willard F. Goff, Seattle. The special exhibit on fractures under the guidance of Dr. Ralph G. Carothers, Cincinnati, and the manikin demonstrations on problems of delivery, arranged by Dr. Charles Franklin, Seattle, were always popular. Special lectures on "The Practice of Public Health and Medicine in Alaska" by Dr. Charles R. Hayman, Juneau, were especially attractive. Numerous other exhibits merited special citation which it is impossible to give.

The smoothness with which all scientific activities were carried out was evidence of the meticulous care rendered by the local committee in making arrangements. The general chairman, Dr. M. Shelby Jared, overlooked no detail in making the meeting a success. The chairman of the subcommittee on the scientific program, Dr. Hale Haven, was on duty continuously at the Auditorium, while the chairman of the subcommittee on color television, Dr. F. A. Tucker, oscillated rapidly between the operating room in Doctors Hospital and the meeting room in the Civic Auditorium. The result was a most successful scientific meeting.

Annual Meeting—New York

Attendance at the Annual Meeting in New York was the largest in the history of the Association. The commodious and air-conditioned Coliseum, and meeting rooms in nearby hotels, were at all times well filled and often crowded to capacity. The scientific program, covering all phases of medicine, was outstanding and merited the credit which it received. Section officers were more than usually alert to the needs of the occasion, with the result that the meeting was a real contribution to graduate medical education.

General lectures were presented all day Monday and on Tuesday morning to large audiences. On Wednesday morning a Trans-Atlantic Medical Conference on cardiac surgery was conducted with the Harvey Society in London, the panels in New York and London being connected by two-way telephone hook-up. Large audiences, both in London and in New York, expressed great satisfaction with this new feature. The undertaking was accomplished with the cooperation of Smith, Kline and French Laboratories, Philadelphia.

The sections of the Scientific Assembly met Tuesday noon to Friday noon with full programs of lectures, panels, and round tables. Most of the sections held one or more joint meetings with other sections. Increased attendance over previous years was noted everywhere, even through Friday morning. Four meeting rooms, accommodating eight sections, were available in the Coliseum, making it necessary for the other thirteen sections to go to nearby hotels.

Color television originated at Roosevelt Hospital and was shown in the Coliseum Monday noon to Thursday evening. Surgical panels were presented each morning and clinics each afternoon. The program was presented with the cooperation of Smith, Kline and French Laboratories, Philadelphia.

Motion pictures were shown in the Barbizon-Plaza Hotel with programs being conducted in two rooms simultaneously. The First International Medical Film Exhibition was presented with the cooperation of Johnson & Johnson, New Brunswick, N. J. (See detailed report which follows under "Motion Pictures and Medical Television.")

Meanwhile in an adjacent room the regular motion picture program was conducted before large audiences. Forty-six films were shown, 23 of which were introduced by their authors. On Wednesday evening there was a premiere showing of the second film in the series "Medicine and the Law."

The Scientific Exhibit was shown on the third and fourth floors of the Coliseum, with all the sections presenting outstanding groups of exhibits. Special features included exhibit symposiums with conferences in adjacent rooms on diabetes and on diet as a preventive and therapeutic tool for the doctor. Other features included an exhibit symposium on arthritis and rheumatism, the special exhibit on fractures, and a group of paintings on the history of medicine shown with the cooperation of Parke, Davis & Company, Detroit. The Sections on Anesthesiology, Obstetrics and Gynecology, and Pediatrics collaborated with an exhibit symposium and conference on perinatal problems. The Section on Pathology and Physiology presented a special exhibit on fresh tissue pathology, and the Section on Diseases of the Chest presented a special exhibit on pulmonary function testing. The Section on General Practice conducted physical examinations for visiting physicians, including electrocardiograms, chest x-rays and eye examinations, with Dr. Charles E. McArthur, Olympia, Wash., serving as chairman and assisted by a large group of experts. Equipment was furnished by the Sanborn Company and Picker X-Ray Corporation.

Fifty-eight exhibits received awards, including 6 medals, 24 certificates of merit, 2 certificates of appreciation, and 26 honorable mentions. One award was made for medical illustration. The Committee on Awards, under the chairmanship of Donovan C. Browne, M.D., New Orleans, worked long and diligently studying the exhibits and making its report. In addition to the above, the Section on Ophthalmology made an award of $250 for the best exhibit in that Section, while the Section on Urology presented the John Morrissey award to one of the urology exhibits.

The total number of participants in the Scientific Assembly, including all phases of the program, was 2,160. Except in a very few instances, where illness or other legitimate causes prevailed, all participants were present and took part in the program according to schedule.

The Council on Scientific Assembly takes this opportunity to express its appreciation to the numerous participants for their cooperation, to all Section officers and special committees for their diligence over many months in preparing various segments of the program, and to members of the headquarters staff who were ever faithful in carrying out the many details in connection with the Scientific Assembly.

Motion Pictures and Medical Television

International Medical Film Exhibition: The most important and time-consuming project completed this year was the International Medical Film Exhibition, which took place during the Annual Meeting in New York. This was the first such exhibition to be held in the United States, and the largest collection of medical films to be assembled for such a purpose. Preparations for this event covered a period of almost two years of concentrated effort after the preliminary arrangements had been made. Meetings were held in Washington, D. C., with various motion picture and government agencies to facilitate the acquisition and transportation of films from other countries. Special permission was granted the American Medical Association providing free entry of all foreign films through the United States Customs for this exhibition. Publicity and assistance were also volunteered by the various representatives through their overseas contacts. This project, as carried out, was in support of the "people-to-people" program which President Eisenhower launched last summer, and the medical and health professions cooperated under the chairmanship of Dr. Louis H. Bauer, secretary general of the World Medical Association.

Applications were received for more than 120 films from 25 countries nominated for showing during the exhibition, of which approximately 80 were previewed. Four films were received from the Iron Curtain countries, two of which were selected from Prague. The final three and one-half day film program consisted of 46 films from 15 countries, and was designed to present outstanding motion pictures produced abroad dealing with the many aspects of and advances in medical science. Each film of distinction selected for showing was awarded a Certificate of Participation.

A symposium on the international exchange of medical films was held as a part of the scheduled program in an effort to stimulate a freer exchange of medical and scientific films between countries.

Excellent news coverage was given to this exhibition by leading audiovisual publications, science writers, and foreign medical organs both before and after the meeting. The director was also interviewed by the Voice of America. A five-minute tape recording of the activities relative to the International Exhibition was made for subsequent broadcasts in 23 countries after being translated and recorded in various languages.

Upon request, a documentation of the International Medical Film Exhibition was furnished to the Office of Private Cooperation of the United States Information Agency in Washington, D. C., to help the People to People Foundation.

Film Library: Twenty new films were added to the motion picture library, making a total of 1,001 prints of 168 subjects. During the year, 4,095 films were lent to medical societies, medical schools, hospital staff groups, individual physicians, and television stations. This represents an increase of 591 film shipments in comparison with the previous year. The income from film service charges was $10,827.40. Not included in the regular film library is the "one print" film library which has now grown in excess of 150 subjects. These outstanding films have been bought or donated to fill special requests from physicians, surgeons and medical educators. A separate catalog of these films is being prepared for publication.

Approximately 28% of the film library distribution is now devoted to prints placed in the library over the years by other bureaus and councils. During the past year, the first two in a series of medicolegal films, made with the cooperation of the A. M. A. Law Department, were released for distribution and three new film subjects were added by the Public Relations Department.

In addition, 27 films from the International Medical Film Exhibition program will be available from the film library for a period of six months following the 1957 Annual Meeting.

The film library is now operating at its maximum capacity for the space and facilities available. The library is still operating in the limited area allowed when it was started 10 years ago, and additional space will be required before activities can be expanded further.

Film Reviews: In cooperation with specialists in various fields of medicine, surgery, and health education, 55 reviews of medical and health films were published in The Journal, and 21 reviews were prepared for publication in *Today's Health*. Cooperation with the Educational Committee of the American Academy of Pediatrics has been continued in connection with the long-term program of reviewing all films in this field. During the past year over 220 films were sent to 21 pediatrician reviewing groups.

Much time has been devoted to revising and bringing up to date the film source file. It now contains over 4,400 films produced for or by the medical profession and is the most complete file of its kind. Information contained in this file was used in answering 1,504 written inquiries this year.

Medical Television: As in the past, much time and effort were devoted to the coordination of television programs for the Clinical and Annual Meetings. This department continues to serve as an information center for inquiries on the latest equipment, advances and use of the television medium as a teaching tool for the medical profession.

Miscellaneous Activities: The film entitled "The Motion Picture in Medical Education" received the Silver Cup Award at the Third International Festival of Medicine and Scientific Motion Pictures in Turin, Italy. This film has been shown also in many medical schools throughout the country.

Publications included Review Booklet 8 containing all reviews appearing in THE JOURNAL during the calendar year 1956, as well as a new catalog containing a list of the films available from the film library.

A new feature was introduced in THE JOURNAL in the form of Illustrated Film Reviews of selected outstanding medical motion pictures. This feature appears whenever a current film of merit is found to lend itself to this type of pictorial presentation. It consists of a brief introduction prepared by the author, followed by approximately 20 illustrations taken from key points in the film which will best tell the story. Each illustration is accompanied by an explanatory caption. Due to the enthusiasm expressed by the many physicians who are interested in these reviews, this feature will be continued and expanded during the coming year.

Cooperation has been maintained with Johnson & Johnson in several meetings devoted to the planning and preparation of a new film to be produced on emotional problems in general practice.

As a joint venture of the American Hospital Association and the American Medical Association, E. R. Squibb & Company is financing the production of a recruitment film for subprofessional careers in the field of medicine. Designed for senior high school student audiences, it will cover careers as aides, technicians, therapists, medical librarians, and nurses. Actual production is expected to start in September.

Bureau of Exhibits

Exhibits developed and created by the Bureau of Exhibits are designed for two distinctly separate types of audiences. One group of exhibits is prepared for professional audiences at state medical society meetings and other scientific assemblies, and the other for public audiences at health fairs, state and county fairs, expositions, and other similar public gatherings.

Medical Exhibits: Medical exhibits for professional audiences are presented with the cooperation of the various councils and bureaus of the Association. During the year medical exhibits were shown at five state medical society meetings and at 14 allied medical group meetings. On each occasion, the Association provided a demonstrator to discuss and elaborate on the subject matter contained in the exhibit. Occasionally this same procedure is followed when medical exhibits are shown at allied health organization meetings.

Health Exhibits: Throughout the past year there has been a continuation of the program established last year of developing a library of health exhibits for public showing, devoted to basic anatomy and physiology. These exhibits have been particularly well received according to reports from state and county medical societies. Mechanical counters incorporated in the exhibits indicated actual visitor participation in excess of 50,000 at one exposition, while more than 26,000 individuals participated by operating the Association's exhibits at other expositions.

Outstanding in this series is an exhibit entitled "Life Begins," which has won acclaim wherever it has been shown. The two copies of this exhibit containing human fetuses embedded in plastic are scheduled for showing, virtually without interruption, during the entire years of 1957 and 1958.

The Association has a total of 51 exhibits which are available for loan. These exhibits were displayed at 159 locations during the past year with an aggregate number of 1,870 showing days. Distribution was widespread, including 34 different states. It was necessary to decline 92 requests for 27 of the Association's exhibits because of prior commitments and insufficient amount of material to meet the demand. There is a great deal of interest shown in health exhibits, and it is impossible to keep up with the demand.

Health Fairs: The health education value of health fairs and health days by county medical societies and local city organizations has been demonstrated on repeated occasions. Health fairs and health days were presented this year in Akron and Cincinnati, Ohio; Oklahoma City; Long Beach, Calif.; and Marietta, Ga. Attendance at some of the fairs was in excess of 200,000 persons, and the exhibits from the Association rated high in popularity.

Museums: The museums of the country offer exceptional opportunities for health exhibits with their ready-made audiences in a receptive mood. Exhibits from the Association have been maintained during the past year at the Cleveland Health Museum; Smithsonian Institution, Washington, D. C.; and the Museum of Science and Industry, Chicago. Health exhibits have also been shown for shorter periods at the Roberson Museum, Binghamton, N. Y., and the Cayuga Museum, Auburn, N. Y.

The Director of the Bureau has continued on the advisory committee of the Cleveland Health Museum, as consultant to the Smithsonian Institution, and as executive director of medical exhibits at the Museum of Science and Industry in Chicago.

Bureau of Health Education

This is the 47th annual report of the Bureau of Health Education, which was established as a Council in 1911, and became a Bureau in 1922.* It represents the 25th year of the incumbency of the present director, who is the fourth individual to hold this position.

Additional Personnel

The 1956 and 1957 budgets permitted an addition to the Bureau's staff of an educator to work with Fred V. Hein, Ph.D., and Donald A. Dukelow, M.D., in the school health project.

Wallace Ann Wesley, M.S., Hs.D., joined the staff of the Bureau as of August, 1956. In the time elapsed since then, Dr. Wesley has made outstanding contributions to the work of the Bureau, both in the office and in the field. Handicapped for most of her first year by lack of adequate secretarial help, she nevertheless developed an effective program in cooperation with her co-workers and made extensive trips to conference and workshops and to fill speaking engagements. In the office, she has been found valuable in intradepartment and interdepartment contacts. She has a keen critical faculty and an outgoing personality. Her acceptance in the field has been more than enthusiastic.

There have been no other significant changes in the staff of the Bureau.

Office Organization

The editorial offices of *Today's Health* were removed from the Bureau of Health Education to the sixth floor. The additional space thus made available enabled us to return to the original plan for the Bureau offices laid out in 1949, with certain modifications. We are now able to have a more efficient organization for the handling of radio and television stock materials, for the storage of office supplies, and for work-table space. Office space has been enlarged, rearranged, and improved to a point where the existing personnel of the Bureau is now efficiently and comfortably housed. There is, however, no room for expansion.

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* Comparative figures for last year are shown in parentheses.

Bureau Files

The Bureau files have been extensively modernized, curtailed in volume, and made more convenient under the supervision of Mrs. Velma Howard, director of the Association's department for filing. Mrs. Howard has instructed most of the Bureau personnel in the elements of modern filing and has greatly enhanced the efficiency of the Bureau's files.

Bureau Library

The Bureau library has been reclassified under the same system as the information source files. All the books have been renumbered and rearranged, and triple indexed as to subject, author, and title.

"This Week" Magazine Articles

The series of newspaper articles in cooperation with *This Week* magazine has been continued, although the number of articles published has been less than in previous years, owing to curtailment of space in *This Week* magazine. Space shortages are a common experience among all magazines, and, therefore, diversification demands the less frequent use of features which might be used more often if space permitted.

The following 18 articles were published during the period covered by this report:

Keep Your Family's Food Safe	James R. Wilson, M.D.
Myths About Heredity	Mr. Amram Scheinfeld
Why Some People Stay Young	Edward J. Stieglitz, M.D.
Warning: The New Fad Diets Can Ruin Your Health	Jean Mayer, M.D.
What You Should Know About Artery Diseases	Nelson W. Barker, M.D.
Don't Be A Hero	W. W. Bolton, M.D.
When Should You Give up Driving?	W. W. Bauer, M.D.
Want to Live Longer—Feel Better?	
Can You Recognize Mental Illness?	George Stevenson, M.D.
Emotional Danger Signal-Colitis	Aaron Karuch, M.D.
Is Your Health Threatened by Radiation?	Fred J. Hodges, M.D.
When Should You Consider Plastic Surgery?	W. B. Hamm, M.D.
Take Care of Your Hair	W. W. Bolton, M.D.
Comeback from a Heart Attack	Louis N. Katz, M.D.
When Hypnosis Helps	Montague Ullman, M.D.
Antibiotics: Handle With Care	Perrin H. Long, M.D.
The Patients Treat Each Other	Hugh Mullen, M.D.
Alcoholism—The Secret Disease of Million Women!*	Sidney S. Grunberg, M.D.

The editors of *This Week* magazine continue to regard this series as one of their most important features; the 35 newspapers distributing the copies of *This Week* magazine to approximately 12 million subscribers furnish some of the largest health education coverage ever enjoyed by the American Medical Association. Reader acceptance of the series has been good, and there has been practically no professional criticism; certainly none of consequence.

Sex Pamphlets

The distribution of the 1956 sex education pamphlets in response to an article in *This Week* magazine by Dr. Herman M. Jahr early in 1956 continues. The total distribution of these pamphlets now exceeds 120,000 copies, and their reception continues to be enthusiastic.

Not only has the current year seen the continued distribution of the sex education pamphlets through the channels of the American Medical Association but they have also appeared in book form published by E. P. Dutton & Company. The Dutton editions are being distributed through bookstores but we have had no report of the sales of these books; no royalty report has fallen due. Inquiries have been received by E. P. Dutton & Company looking toward the publication of an English edition of these books. These proposals are now being negotiated. The principal issue seems to revolve around the desire of the English publishers to "Anglicize" the manuscripts to improve their suitability for English readers. The American Medical Association has insisted and the Dutton Company has agreed that any such Anglicized version be approved by the Bureau before permission is given to publish in England.

Fitness

In 1956 the Director of the Bureau reported his inclusion in the President's Conference on the Fitness of American Youth, originally announced for Denver in 1955 and rescheduled at Annapolis in June of 1956. Since that time the Director has been in close contact with the office of the President's Council on Youth Fitness and with Shane McCarthy, LL.D., its executive director. The Director of the Bureau has now been appointed a member of the Citizens' Advisory Committee to the President's Council; this is a group of 120 citizens appointed as individuals, and not as representatives of any group or organization. The composition of the Advisory Committee is similar to the personnel of the Annapolis conference. It includes educators, coaches, athletes, recreation personnel, and a very limited representation of physicians in view of the large medical element necessarily involved in fitness. Representatives of mass mediums of communication and of organized labor are included in the committee. The committee is scheduled to meet at West Point on Sept. 9-10, 1957.

In the meantime, great capital is being made of the President's Commission by those who are interested in physical activities, and especially those concerned with sports and athletics. Certain commercial athletic interests are doing everything in their power to enhance this expansion of sports programs as the chief channel to fitness.

The medical profession has long deplored the extension of high-pressure forms of competitive sports and excessive emotional and physical tensions into the lives of younger children. This extension is now being accelerated. Despite the fact that the Annapolis conference definitely stressed the broad and comprehensive nature of fitness, embracing not only the physical but the mental, moral, social, and spiritual phases, much of the activity presently in evidence is along the lines of the athletic and the calisthenics aspects of fitness.

Television, magazines, and newspapers are full of stories of the unfitness of American youth; in one reference the muscles of American youth were compared to "custard." Unfavorable comparisons of American children with those of European countries continue to be circulated. The medical viewpoints are given scant consideration, or at the most, viewed with polite skepticism.

Unless the fitness movement is given serious attention on an organized basis by the medical profession, it is in great danger of being captured by enthusiasts where concept of fitness is limited. Many of these have lost sight of the fact that sport and activity are intended for the benefit of the individual and not the individual for the benefit of the sport. Too much emphasis on high pressure competition, too much community-consciousness of winning teams, too much implied condemnation of losing contestants, too much emotional tension and excessive physical stresses are almost certain to result.

Many of those who believe in practically unlimited competition at any age have challenged the medical profession to show that injury has occurred. They have no concept of a preventive viewpoint looking toward the wise use of activities to prevent injury. There have been some studies indicating that injuries are not a mere figment of the medical imagination, but that actually they have occurred. Physicians are urged to make known in the medical literature all instances of physical injuries and emotional problems which may in any way be reasonably attributed to excessive pressures, overmatched competition, or other abuses of activities which ought to be normal, healthful, pleasurable and contributory to the broader concept of fitness.

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* Approved by A. M. A. but not prepared on our request.

Well-trained physical educators and educators as a whole are as keenly aware of the dangers of a runaway physical fitness campaign as are the physicians. Close cooperation between the two groups should be fruitful in protecting the youth of our country against well-meant but excessive enthusiasms, or against deliberate exploitation for personal gain or for profit.

Defense of Research

The Bureau has been the Association's repository for records concerning the activities of the antivivisectionists and for cooperation with the various A. M. A. committees on protection of research; at one time the Director was a member of the board of directors of the National Society for Medical Research. Since the latter organization now handles effectively the entire problem of antivivisectionism, the Trustees authorized the Bureau to divest itself of this function. Accordingly, the records of the Bureau were offered to the A. M. A. Bureau of Investigation and to the National Society for Medical Research; each took the materials most pertinent to its work. A few historical records remain, but the active participation of the Bureau in the campaign against antivivisectionism now consists largely of referring correspondence and problems to the National Society for Medical Research.

Correspondence

Correspondence with doctors and cooperating agencies 10,359 (9,576); question-and-answer correspondence, 19,621 (19,505). A total of 761 (477) queries were received from the television audience of the Ciba program "Medical Horizons."

The total correspondence handled by the Bureau was 30,741 (33,942).

Manuscript pages of typed copy totaled 7 223 (5,412).

Questions and Answers

During the 12-month period ending June 30, 1957, the Bureau answered a total of 16,129 (16,490) letters. The leading subject of interest was plastic surgery, which brought 3,232 requests for information and literature.

The second highest number of requests was for material on the subject of medical guidance. These totaled 1,038. This was due in large part to an increasing interest of high school youth in the medical profession. In third place were requests for material concerning books, literature and journals, totaling 940.

The fourth subject of leading interest was sex education for children, which brought 574 requests. Following, in order of popularity, were school health, 424; food, 414; mental hygiene, 346; diseases of the skin, 313; sex in marriage, 289; and heart disease, 269.

Special mailings of packets of free material to school teachers totaled 1489 (1093); 2003 catalogs were mailed (1922).

The *Today's Health* column "That's a Good Question" contained 101 articles—76 prepared by the Bureau, 15 by the Council on Foods and Nutrition, 8 by the American Dental Association, and 2 contributed by outside consultants.

Loan Collections

Requests for the various packets of health education material made available by the Bureau to physicians and professional workers for use in the preparation of health talks for presentation to lay groups totaled 14 (18) for the 12-month period ending June 30, 1957. The sources of inquiry were: 11 doctors, 1 registered nurse, 2 A. M. A. Auxiliary members.

Leading requests were for material on becoming a physician, medical advances, sex education and maternal care, with two each, and there were requests for literature on heart disease, health in the home, allergy, healthful living, digestive disorders, and virus diseases.

Manuscripts, Book Reviews, Etc.

The Bureau staff reviewed 11 (8) books for THE JOURNAL and 12 (13) for *Today's Health*, and prepared 126 (118) contributions for *Today's Health* (manuscripts, editorials, questions and answers, discussion questions, and technical ticklers).

The staff originated 44 articles and 8 book reviews published in periodicals other than those of the American Medical Association; this is exclusive of the 313 articles published by the Director through King Features Syndicate under special authorization from the Board of Trustees.

Advice and consultation on manuscripts was furnished 5 (7) organizations.

Radio and Television

Radio: The Bureau continues its watchful evaluation of radio in relation to television in order not to commit itself to either medium exclusively as long as both are significant. Radio continues to be a very active factor. Advertising time on radio is constantly sold out, and radio is flourishing exactly as it did a year ago as mentioned in the 1956 Report of this Bureau. The appearance on the market of the highly portable transistor pocket radio sets increases the radio market to a point where the local medical society cannot afford to neglect the use of time on this medium.

For this reason the Bureau continues to produce for radio. During the past year the following radio series have been produced:

(a) *Menu for Health* is a musical radio series dealing with 13 important aspects of nutrition. The platters are expertly prepared with dramatic presentations and musical trim, and with authoritative medical summaries by D. A. Dukelow, M.D., of the Bureau staff. The music is by Charles Paul, the one-man orchestra; direction by Blair Walliser, producer of more than 18,000 radio and 200 television shows; the cast is chosen from among the most seasoned radio-television film-actors in the industry and is different with each program.

(b) *Harmony and Health* is a series of musical programs setting forth the music popular in 1890 and at five-year intervals thereafter up to 1955. In conjunction with each program, the discussion linked with the music is that of the most important health or medical topic of the year. In the 1890's for example, x-ray; in 1900 diphtheria antitoxin; in 1920 insulin for diabetes; in 1935 the "wonder drugs", in 1955 the Salk vaccine; and so on for the intermediate years. The program idea originated with Fred V. Hein, Ph.D., of the Bureau, and he and William Bolton, M.D., were the scientific authorities. Music was by the Charles Paul Trio and vocalists "The Fraternalairs" (until recently the Cities Service Quartet).

(c) A series on surgery to replace the former series called "The Story of Surgery" was produced under the title *Surgery Today*. This series was done by hanging a microphone around the neck of a surgeon and another around the neck of the Director of the Bureau standing at the surgeon's elbow in his operating room. The operation was described and discussed in the course of the surgical procedure, and the recording was made on tape. By intensive editing this was reduced to a 15-minute highlight presentation of the actual operation, plus an interview with the surgeon which carried the educational message. The over-all impact of the series was to illustrate the safety of surgery, the greater comfort in anesthesia, early ambulation, the importance of postoperative and preoperative care, and the fact that surgery and safety are determined not by age but by the condition of the patient. Thirteen outstanding surgeons admitted us to their operating rooms. This series was scheduled for release to the county medical societies when the Columbia Broadcasting System evidenced an interest in the series. Negotiations are now in progress to put the series on the Columbia radio network nationwide, and perhaps to produce 26 additional programs of the same type, also for network presentation. All expenses will be assumed by the Columbia Broadcasting System, and the first 13 programs will be released after use on the network for further local use in areas where they have not previously been heard.

If the surgery series is taken by CBS, it will be replaced by a series on Winter Health Hazards, originated by Dr. William Bolton.

(d) *Mind Alone* is a transcription series on mental and emotional health replacing the highly useful but now slightly outmoded series "Why Do You Worry?" This new series deals with mental health and is prepared in cooperation with the Council on Mental Health, one of whose members, Dr. M. Ralph Kaufman, agreed to act as a consultant on the series and has approved all the scripts. Production is expected to take place in the early autumn of 1957. The program titles in the series are as follows:

1. As the twig is bent (emotional factors in infancy)
2. False courage (parent-child relationships)
3. The uncalm sea (adolescence)
4. Be a man (courtship, marriage, bachelorhood)
5. Thank you, grandma (getting along with relatives)
6. The hidden terrors (fears)
7. Slow poison (being on the the wrong job)
8. Little joker (getting along with co-workers)
9. The mother who wouldn't let go (psychosomatic medicine)
10. The unspoken question (emotional) aspects of organic illness combined with permanent disability)
11. Join the world (old age problems other than retirement)
12. Nothing to fear, but fear (menopause)
13. The king of easy street (retirement)

The distribution of electrical transcriptions involved a total of 1,074 local units serviced through 281 distributing centers. The total number of sets of transcriptions distributed was 1,355 from which a total of 20,633 individual broadcasts were made.

The extensive use of electrical transcriptions by many stations has caused the Bureau to issue certificates of participation as a token of the Association's appreciation for cooperation. During the year covered by this report, 87 radio stations which have broadcast 10 or more series of 13 programs each during the past five years will receive certificates. This will make a total of 265 stations since 1954.

Television: In television the Bureau has undertaken little production during the current year, emphasizing the further development of television helps and the better distribution of the materials on hand.

The only production undertaken was a series of 20-second "spots" intended for delivery to television stations to be used at their convenience at the so-called station breaks between programs. These spots pointing up important health and safety factors were based on nursery rhymes. A typical one:

Humpty Dumpty drove a fast car
He wrecked it before he had gone very far
It took the best surgeons and medical men
To put Humpty Dumpty together again.

This jingle delivered in 20 seconds was accompanied by animated cartoons. The entire series of 10 was offered to county medical societies carrying their own name and without cost to them. The response thus far has been relatively small. The titles in this series are as follows:

1. Colds (Solomon Grundy)
2. Road Safety (Humpty Dumpty)
3. Isolation (Large Family in Shoe)
4. Pointed Toys (Boy from Farmington)
5. Cold Prevention (Rainy Weather)
6. First Aid (Jack and Jill)
7. Long Life (There was an old man)
8. Diet (Mary ate a little lamb)
9. Balanced Meals (Meat and milk etc.)
10. Food Preservation (Peas Porridge Hot)

The entire television situation emphasizes further the correctness of the Bureau's previously expressed attitude to the effect that television is essentially a local rather than a national function. Except for heavily financed programs such as the "March of Medicine" by Smith, Kline and French, or Ciba's "Medical Horizons," there is little opportunity for network television of purely educational character aside from entertainment programs with educational impacts. The public service time simply is not available.

Television by the medical profession must be carried out locally if it is to be effective. The Bureau, therefore, has concentrated on the expansion of its "TV-Tested Televisuals," which it has listed in a catalog available to all county medical societies. These televisuals consist of charts, diagrams, tabulations, and other visual material not readily available locally, plus a few three-dimensional models. All this is available to county medical societies at no cost.

Early in 1956 the Bureau recommended to the Trustees the holding of another television clinic. The first television clinic was held in 1948, in New York, under the auspices of the Bureau; the second was sponsored by the Council on Medical Education and Hospitals, with particular reference to medical closed-circuit television and its techniques; the Bureau cooperated. The Trustees approved the 1956 recommendation of the Bureau and instructed the Bureau and the Department of Public Relations to organize a television clinic at a time and place to be determined, and with such participation and cooperation from the television industry as could be found practicable. Plans are under way as this report is written for the implementation of the instructions from the Trustees.

The television films "It's Baby Time," manufactured in January, 1956, with the Director of the Bureau participating with Jane Warren, R.N., under the direction of Herbert S. Laufman & Co., continue to run commercially under the sponsorship of Libby, McNeil & Libby. They have been shown in many communities and have been well-accepted both by the profession and by the public. The Bureau has purchased 13 selected films from the 52 episodes of "It's Baby Time." These are now being distributed to county medical societies on a basis partially commercial and partially public service. Public service airing of these films is being arranged with the films furnished by the Bureau. In case a local sponsor acceptable to the local medical society becomes available, a switch from public service to commercial telecasting may be made. The agreement also provides that if a station telecasts 13 programs or any portion thereof on a public service basis, it shall have priority over competitors in the same area for the commercial use of the remaining films either in the group of 13 or among the 39 additional available films. It is too early to predict the extent of use, but responses indicate a lively business in the distribution of these films.

The series of films "It's Baby Time" received an award for excellence in concept and presentation from the Chicago Federation of Advertising Clubs. This is in addition to the citation previously received from the Institute for Radio in Education at Ohio State University.

As usual radio and television were handled by the Bureau at the Clinical Session in Seattle and the Annual Session in New York. The exception is the inaugural telecast which is handled by the Department of Public Relations. In summary, it may be said that coverage was wide and satisfactory at both meetings, particularly so at the New York Annual Session, where it is conservatively estimated that the Association received more than one-half-million dollars worth of television time entirely without charge, the only cost being that of servicing and preparing the programs.

The distribution of television materials included responses to a total of 649 requests. In servicing local television outlets, the Bureau lent three-dimensional models 9 times, charts and diagrams 60 times, distributed 225 copies of its listings of television helps, and 114 copies of its handbook, "Television in Health Education." The Bureau booked its scripts with film 22 times and its production packets 15 times. Its films were distributed as follows: "Operation Herbert," 28 times; "What to Do" Series One, 24 times; Series Two, 34 times; Series Three, 32 times.

Selected numbers of the five-minute "What to Do" series were incorporated into a commercial service production along with excerpts of "how to do it" types of film produced from such commercial sources as General Electric, General Foods, etc. These films were of use to the housewife and will give a very wide distribution of the Bureau's materials at a very small expense.

Radio and Television from Clinical and Annual Sessions A. M. A.: Radio and television services other than scientific telecasting in color in connection with the Seattle Clinical Session and the New York Annual Session were handled, as usual, by the Bureau of Health Education.

At both sessions, in many instances its materials were used by well-known broadcasters and telecasters on established programs with wide and regular listening audiences.

Seattle broadcasting stations and the networks were remarkably good to the Bureau in coverage of the Clinical Session. In fact, you no doubt will agree that the Association has had an unusually happy experience from the following summary of coverage.

Television: 3 live and 8 film coverages; radio: 8 coverages and 4 interviews on the Voice of America. Some of this coverage was on networks and nationwide.

At the New York meeting there were 26 network programs and 27 local programs utilized on television. The radio coverage in New York included 14 network programs, 6 tape recordings for the Voice of America, and 15 local programs.

Local Broadcasts: One local radio program and five television broadcasts were given by the staff of the Bureau in connection with meetings being attended in several states.

Health and Fitness Division

The Health and Fitness Division, staffed by three consultants, Donald A. Dukelow, M.D., Fred V. Hein, Ph.D. and Wallace Ann Wesley, Hs.D., functions as an integral part of the Bureau of Health Education. Consultative services on the medical and educational aspects of school health and on administrative and interprofessional problems in school health are offered by this physician and educator team to state and local medical societies, voluntary and governmental agencies in education and public health, colleges and universities, and others concerned with the health of school aged children.

During the past year the three consultants accepted invitations in 27 states, the District of Columbia, and Canada to deliver 62 addresses and to take part in 86 conferences, institutes, annual meetings, and conventions of health education or other organizations and to perform a variety of other services. In nearly every instance such engagements included a number of assignments. Altogether the consultants' travel covered 74,140 miles. Demand for consultant services regarding school health practices and policies has steadily increased until it has become necessary to decline many invitations each year because of the limitations of the staff.

The Sixth National Conference on Physicians and Schools, sponsored by the American Medical Association, is to be held Oct. 30 to Nov. 2, 1957, under the auspices of the Bureau of Health Education at the Hotel Moraine, Highland Park, Ill., which has been planned by the consultants in health and fitness during this year. As was true of the five previous conferences, the Sixth National Conference will be an invitational affair, attended by some 200 representatives of state and territorial medical associations, health departments, education departments, and delegates from a number of national voluntary and governmental health and educational agencies. More than 60 consultants drawn from the professions of medicine, education and public health will serve as leaders for 10 discussion groups concerned primarily with relationships of physicians to the school health program.

The National Conferences on Physicians and Schools have stimulated many state and local conferences of a similar nature covering school health. The consultants have participated in planning and conducting many of these meetings and within the limits of available time, their services are available to state associations for such purposes.

In preparation for the Sixth National Conference in health and fitness, the consultants are conducting a limited normative survey of state medical society activities in the field of school health. A previous report covering the same areas of endeavor was published in October, 1955, under the title, "Survey Report of School Health Activities of State Medical Associations." The new survey, based on information supplied by the state medical associations, will bring the earlier report up to date and summarize recent efforts by constituent state societies in the field of school health.

One of the educational consultants (Hein) finished his term as a member of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the annual meeting ending March 13, 1957. At this year's meeting of the committee, he completed his seventh year of service as secretary. The medical consultant (Dukelow) was appointed by the Trustees to succeed Dr. Hein as an A. M. A. member of the Joint Committee and was elected secretary. All three consultants provide assistance to the Joint Committee in a number of ways and particularly as technical assistants to the several subcommittees concerned with Joint Committee projects and publications.

The medical consultant (Dukelow) continues in a consultative capacity to the Council on Medical Service. He serves as a consultant to the Committee on Maternal and Child Care, liaison between the child health activities of the Council and those of the Bureau of Health Education, as these relate to school health programs. Dr. Dukelow also has served as health education consultant to the Joint Committee on Medical Care for Industrial Workers of the Council on Medical Service and the Council on Industrial Health. A recent assignment is as liaison between the Bureau of Health Education and the Committee on Relationships Between Medicine and Allied Health Agencies of the Council on Medical Service. This involves interagency and interprofessional relationships.

One of the educational consultants (Hein) served in a consultative role to a subcommittee of the A. M. A. Commission on Medical Care Plans which was concerned with college health services. In this capacity he met with the subcommittee and provided them with background material and data relating to this particular area of study.

During the current year, as in the past, the consultants in health and fitness have assisted the Bureau Director in the preparation of several transcription series and other radio and television programs. This involves aid in developing ideas, gathering appropriate materials, review of scripts to determine their scientific accuracy and educational implications, and, on appropriate occasions, serving as consultants or participants at the time of production.

Health education films, particularly those used for visual education in the schools, are important educational mediums. The consultants have advised on the production of films and film strips for classroom instruction in health subjects. Within limitations, they review films for health education of the public and those used for classroom instruction in health to determine their technical accuracy and applicability. In certain instances, the consultants make use of appropriate films from the library of the Committee on Medical Motion Pictures in connection with their Association responsibilities in the field.

Considerable consultant time is given to conferences, meetings and institutes conducted by universities, teachers' colleges, municipal boards of education, state departments of health and education, and other agencies to improve understanding of school health services, school health education, and healthful school living. These in-service education projects vary in length from two days to two weeks and are attended by teachers, school administrators, college faculty members, parents, physicians, dentists, nurses, and others concerned with child health.

The consultants have served at the request of various groups in Arkansas, California, Canada, District of Columbia, Florida, Illinois, Iowa, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

The consultants have cooperated with several national agencies and attended their national conferences. Dr. Hein has attended the School and College Conference of the National Safety Congress, the Joint Committee on Health Problems in Education of the National Education Association and American Medical Association of School Administrators, the American Public Health Association, Western Branch Public Health Association, the Society of State Directors of Health and Physical Education, the American Association for Health, Physical Education and Recreation, National Conference on Health Education for Teachers, National Congress of Parents and Teachers, American College Physical Education Association, National Conference on Intramural Sports, and the National Society of Public Health Educators.

Dr. Dukelow has participated in the activities of the National Safety Congress, the National Tuberculosis Association and several of its state affiliates, the Joint Committee on Health Problems in Education of the National Education Association and American Medical Association, the American School Health Association, the American Association for Health, Physical Education and Recreation, the American College Health Association, the New England Health Association, the National Congress of Parents and Teachers, the National Council of the Boy Scouts of America, the National Education Association, the Educational Film Library Association, the American Academy of Pediatrics, the American Public Health Association, the Society of Public Health Educators, the National School Boards Association.

Dr. Wesley has participated in the activities of the American Association for Health, Physical Education and Recreation, the American School Health Association, the National Education Association, the National Association for Physical Education of College Women, the American Physical Therapy Association, the National Tuberculosis Association, the National Association of Higher Education, the National Congress of Parents and Teachers, the Illinois Health, Physical Education and Recreation Association, the Illinois Public Health Association, and the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.

The consultants have also participated in the orientation of foreign visitors and graduate students to the Bureau, particularly in reference to school health policies and programs. During the past year, individuals or parties from many countries and students from a number of universities have been welcomed to the Bureau offices.

The consultants have contributed articles and reports to various periodicals including THE JOURNAL of the American Medical Association, *Today's Health*, the *Journal of School Health*, the *Journal of the American Association for Health, Physical Education and Recreation, National Parent-Teacher*, the *Philippine Journal of Health*, the journals of state and regional medical and education associations, and *This Week* magazine. The medical consultant (Dukelow) serves as a medical editor and consultant to *This Week* magazine in checking the medical accuracy of the health articles published with Association endorsement. The educational consultant (Hein) is serving as editor for a yearbook on the health of teachers being produced cooperatively by the American Association for Health, Physical Education and Recreation. Dr. Wesley has contributed to the American Association for Health, Physical Education and Recreation book, "Fit To Teach," and has contributed to the *Philippine Journal of Health*. The addresses and informal discussions of the consultants have also appeared in many state publications and reports of proceedings.

For the 11th year the consultants have prepared discussion questions on the articles in *Today's Health* to aid teachers in using the Association's health magazine as classroom health education material. The questions are developed for each issue published during the school year and sent to all interested schools subscribing to *Today's Health*.

As a means of promoting healthy interprofessional and interagency relations between the American Medical Association and other educational and health agencies concerned with school health, community organization and health promotion, the consultants are active in the work of many associations. The Board of Trustees or the General Manager has approved membership or participation in many organizations or activities.

Within these organizations and in numerous other agencies in which the consultants do not maintain active membership they seek to advance school and child health interests by accepting invitations to address or confer with participants at meetings called by such agencies. Services of this nature have been provided for state and local medical associations and their auxiliaries, various councils, bureaus and committees of the American Medical Association, various national and state health agencies, public health and education departments, parent-teacher associations and professional education associations and other similar groups. As a matter of policy, the medical association of the state and county in which such meetings are held are always given advance notice of the presence in their vicinity of a consultant from the Bureau of Health Education.

A considerable correspondence covering all aspects of the school health program as well as related interests is carried on with students, teachers, school administrators, physicians, medical societies, and the many agencies concerned with the health of the school-aged child. So far as possible, questions are answered in terms of the local situation as the consultants know it from their field experience, or in terms of policies evolving from the various conferences they attend. Much of this correspondence is supplemented by the pamphlets published by the Bureau of Health Education.

The pamphlets that have been the basis of the school health consultation services continue in their usefulness and popularity. These are used extensively by physicians in their offices for teacher education, in community coordination, and in planning health administration in the school. Budgets granted by the trustees permit liberalized distribution policies for the popular pamphlets entitled "Suggested School Health Policies" (Revised Edition 1956) and "Health Appraisal of School Children," as well as the reports of the National Conferences on Physicians and Schools. These can now be made available in limited quantities to state medical associations and medical schools.

Bureau Publications

Pamphlet Production and General Printing: The Bureau now carries 303 (283) health education pamphlets as regular A. M. A. stock in addition to offering 44 (43) reading lists. During the year it added 43 (31) new titles, 40 (27) of which were reprinted from *Today's Health* and 3 (4) of which were specially written. Additional printings to replenish the stock were ordered for 43 (76) titles, and 47 (42) titles were discontinued. Six additional *Today's Health* articles were reprinted for the authors or others but not put into A. M. A. stock.

In addition to the pamphlets, the Bureau prepared 4 (5) new promotion folders for its electrically transcribed radio series, an announcement folder for the "It's Baby Time" award-winning television film, and 2 inserts for the Televisuals booklet.

Advertising, Promotion, and Sales: The Bureau has approximately 51 (48) filler ads, in a variety of sizes, which are written and maintained for use in A. M. A. publications. A special ad was written to appear in the Convention issues of *Nursing Outlook.* The Bureau continues to design a third-page ad each month for *Today's Health*, publicizing its electrically transcribed radio series. A special ad was prepared for the *This Week* magazine's compilation of A. M. A. health articles, "How to Enjoy Good Health."

In 1955 the *My Baby* magazine listed the Bureau's catalog in an offer of free material and 44 (1,194) requests were received in the current year from that old offer. Its catalog of publications was also offered to readers of the Bulletin of the Women's Club Service Bureau during 1955, and 1,350 (79,297) catalogs were sent in response to requests from various women's clubs as a result of that offer.

Interest in the new sex education series continues to be extensive. The promotion piece, which includes an order blank, has been distributed in requesting physicians, medical societies, teachers and leaders of youth groups—35,000 (75,000) of the flyer have been distributed.

Orders on a coupon which appeared in *This Week* magazine on Aug. 21, 1955, accompanying an article on child training by Herman Jahr, M.D., are still being received—1,052 (28,788) orders for 3,801 (96,775) booklets have been filled. Mailing has been handled by the Repass Letter Service through A. M. A. Services, Box 8610-A.

During the year the Bureau distributed 100,000 (175,000) copies of its catalog, "Publications About Your Health." Fifteen organizations list either the Bureau's catalog or some of its pamphlets in their own catalogs.

The Bureau's literature (14,894 items) was exhibited and distributed at meetings, workshops, "Health Days," "Career Days," state and county fairs and by schools and Parent-Teacher Associations.

Six hundred thirty-nine (548) letters were answered, from individuals, organizations inquiring either about available literature, reprint permissions or the possibility of obtaining reprints of *Today's Health* articles.

Reprint Permissions: The increasing appeal of *Today's Health* is evidenced by the ever-broadening use of *Today's Health* articles by consumer magazines, technical and professional journals, house organs, religious and fraternal magazines, newspaper supplements, foreign publications and the United States Government.

Permission has been granted during the past year for *Today's Health* articles to be used on "Voice of America" broadcasts; in Braille publications; on "talking book" records; and in periodicals in at least 13 foreign countries or languages.

Reprint rights for 49 (34) articles and 6 cartoons from *Today's Health* were worth $1,419.00 ($1,526.70) to 24 (11) publications during the past year. Three of these ($145) granted the use of *Today's Health* material for use in one college and two elementary school textbooks.

Complimentary reprint permissions were granted to 151 (132) publications for the use of 218 (168) articles, 5 cartoons, and 2 verses. Of this number 23 items were for inclusion in 8 textbooks and 5 other bound volumes. Eighteen house organs or company publications asked for and received the right to use 26 articles. Ten articles were used by eight publications for the blind.

Meetings and Conferences

The Bureau staff traveled 129,881 (107,542) miles to attend meetings or address audiences in 32 (34) states, the District of Columbia, and Canada. Audiences numbered 100 (153) and totaled 18,652 (16,569) persons. For various reasons, it was necessary to decline 90 (87) engagements.

Cooperative Relationships

The Director serves as the official representative of the American Medical Association on the following committees:

Advisory Committee to the President's Council on Fitness
National Citizens Committee for Educational Television, Advisory Council
Cleveland Health Museum, National Advisory Board
A. M. A. Committee on Medical Aspects of Automobile Injuries and Deaths
Safety Organization Subcommittee on Organized Public Support of the President's Highway Safety Conference
National Congress of Parents & Teachers, Advisory Committee on Health and Summer Round-Up
National Safety Council:
  Home Safety Conference
  Advisory Committee on Organization and Policy
American College of Preventive Medicine
  Chairman, Council on Public Health Education

United States Government Agencies: The Bureau continues to cooperate by correspondence or otherwise with government agencies. Materials or information have been furnished during the past year to 15 government agencies.

Joint Committee on Health Problems in Education, A. M. A.-N. E. A.

The Joint Committee held its annual meeting at the American Medical Association offices in Chicago, March 11-13, 1957. This committee, which was formed in 1911 and is one of the oldest joint committees of either organization, meets alternately in the headquarter buildings of the two parent associations. The major function of the Joint Committee is to consider principles and policies affecting the health of children and youth which are the mutual concern of the two professions.

The chief business of the committee this year was a discussion of the reports of subcommittees concerned with the preparation of several pamphlets, planning promotion procedures for the new book on "Healthful School Living" now in the process of publication and the review of many conferences recently held or to be held.

"Health Appraisal of School Children," developed by the committee, is now in process of revision. New pamphlets authorized for future development include "Health Examination of School Personnel," "Pupil Transportation," "Check-list for School Health," and a revision of "Mental Hygiene in the Classroom." The committee authorized a revision and reprinting of the book "Health Education" last revised in 1948. These new and revised books and brochures will be distributed by both the National Education Association and the American Medical Association.

During the 1957 sessions, it was announced that more than 120,000 pamphlets from the sex education series, published by the Committee a bit more than a year ago, have been sold. This series includes five booklets, four of them for children and youth of various ages beginning with the young child, and the other an instructional guide for parents, teachers and youth leaders. During the year the two associations distributed nearly 68,000 other pamphlets and 3,700 of the two books prepared by the Committee.

New subcommittees were appointed to begin work on revision of "Health Education," revision of "Health Conditions Affecting the Personality of School Youth," and revision of "The Physical Educator Asks About Health."

The Committee adopted resolutions on several subjects. These are briefly abstracted as follows.

1. Reaffirm its support of programs leading to the improved fitness of our young people and reiterated the belief that fitness can be judged only through appraisal of all aspects of organic, psychological, and social growth.
2. Physical education in schools and colleges cannot be safely curtailed or overlooked.
3. Reaffirmed its recommendations relative to adequate time, facilities and personnel for health in both school and college curriculums.
4. Endorsed the policy statement of the American Academy of Pediatrics on competitive athletics for children 12 years of age and under.

5. Recognized the need for dentists to work with educators, physicians, public health personnel, and others concerned with the development and improvement of school health programs.

6. Endorsed the phliosophy expressed in the program of continuous health supervision promulgated by the National Congress of Parents and Teachers and commended the extension of such programs.

7. Urged the full utilization of the opportunity for protection against poliomyelitis by Salk Vaccine.

Delbert Oberteuffer, Ph.D., was reelected chairman for 1957-1958. E. H. Pawsat, M.D., was elected vice chairman. F. V. Hein, Ph.D., who has served eight years as secretary ended his term on the Joint Committee with this meeting. His successor, D. A. Dukelow, M.D., was elected secretary.

Bureau of Medical Economic Research

The period covered by this annual report is from July 1, 1956, to June 30, 1957. During that year the Bureau published bulletins 102-102A and 103, and miscellaneous publications M-105 to M-108. Approximately 32,000 copies of all Bureau bulletins and 84,000 copies of all Bureau miscellaneous publications were distributed. Current activities of the Bureau include completion of the manuscript and tables for bulletin 104 (The Burden of Accident Cases on Hospitals), editing and coding on bulletin 105 (Totality of Physicians' Service in Hospitals), and a series of articles relating to the Director's four-month study in Australia and New Zealand on the effects of the aging electorate on the welfare state trends. Bulletin 104 deals with the role of accidents among discharged hospitalized patients. Bulletin 105 will present data on the age, sex, length of stay, diagnosis, and operative procedures for every hospitalized person discharged during the third week of October, 1956. Both of these bulletins are phases in a five-year study to estimate the totality of services physicians provide in the hospital, office, and home. In addition, the Director plans a revision of several past publications of the Bureau, including bulletin 84 on physicians' incomes, bulletin 101 on the distribution of medical school alumni, and a publication on current data for medical care expenditures. Judging from the volume of written and oral inquiries, the Bureau should make another study of physicians' incomes. In 1951, according to the Department of Commerce, the average level of physicians' incomes in the United States was 122% higher than in 1929, and the average level of the incomes of all gainfully employed people was 125% higher. A check is needed to determine if this similarity in the rate of increase has continued since 1951. A sample study of medical care costs is also needed.

Much of the staff work during this past year has been on the five-year study mentioned above, and much work remains to be completed. The first item in this series, bulletin 97, presented data on the age and sex distribution of patients treated by physicians in hospitals. Bulletin 102-102A, "Some Categories of Patients Treated by Physicians in Hospitals," the second publication in this extensive study, was restricted to some of the larger and more easily defined categories. Hospitalized inpatients discharged from the nearly 7,000 hospitals in the U. S. during 1954 were distributed as follows: One or more surgical procedures were performed on 8,100,000 discharged inpatients, or 39.4% of the 20,700,000 inpatients discharged during the year; 3,800,000 or 18.4% of this total were obstetric cases (exclusive of cesarean sections); 1,000,000 or 4.9% were hospitalized for cardiac disease; 585,000 or 3.0% were hospitalized for malignant neoplastic disease; 720,000 or 3.6% were hospitalized for fractures; 1,100,000 tonsillectomies (including T and A) were performed on 1,100,000 or 5.4% of the discharged inpatients; and appendectomies, with the diagnosis of chronic or acute appendicitis only, were performed on 500,000 or 2.4% of the discharged inpatients. These data indicate, of course, only a portion of the totality of physician services rendered during the year to hospitalized inpatients.

The next phase in this study after the completion of bulletin 105 will be the collection of similar information from physicians regarding patients seen in the office and in the home. When all data are collected, correlated, and evaluated for publication in 1958 or 1959, the Bureau will have presented a rough estimate of the totality of services rendered annually by physicians to the American people. It will then be possible for the first time to present a counterpart to the total expenditures of the American people for medical care; the value side as well as the cost side of physicians' services will then be delineated.

A New Nomenclature Tool

Out of this present study of 300,000 discharged patients will come a new and important tool for physicians. Approximately 6,000 of the 7,000 hospitals reported to us the age, sex, duration of stay, the final diagnosis for which the patient was hospitalized, additional diagnoses, if any, and the operative procedures, if any, of the patients discharged during the seven days starting Oct. 21, 1956. In listing the diagnosis for each patient the hospitals were instructed to use the code numbers in the A. M. A. publication Standard Nomenclature of Diseases and Operations, fourth edition.

This mass of data has presented the Bureau staff with a problem almost as difficult to solve as was presented by the medical service area study several years ago. In addition to the routine work of editing and coding the information for each of 300,000 patients, the problem involved was how to group the 9,000 or more different diagnoses into a manageable number for cross-classification, say 200 groups.

As in previous studies in this series, it is planned to cross-classify the results by diagnostic categories (or groups) requested in the questionnaire, as well as by the size of hospital, the type of hospital, and the state or region of the country, and the patient's age, sex, and duration of stay. This problem of grouping was presented on several occasions to the editor of the fourth edition, Dr. Edward T. Thompson, and associate editor, Adaline C. Hayden, as well as to Dr. Lull and Dr. Smith. Although the Standard Nomenclature code numbers are clearly the best method of gathering the original data on patients, they do not provide a grouping of diagnostic categories. For example, segregating all cases of malignant tumors by Standard Nomenclature code numbers in IBM punch cards is now a very awkward and expensive procedure.

The Director is happy to state that Dr. Thompson and Mrs. Hayden are now preparing approximately 160 classes into which the 9,000 diagnostic categories can be grouped. In our study we shall test these 160 groupings and hope that out of this cooperative effort there will come a permanent addition to Standard Nomenclature which will enable original data to be gathered from the original source by Standard Nomenclature code numbers and then permit the reports to be made in terms of only 160 broad groups. When this is done, the one major disadvantage of using Standard Nomenclature for statistical purposes will be eliminated.

Other Publications

Bulletin 103, "Physician Mortality, 1949-1951," examined the deaths of 10,738 physicians, 1949-1951, relative to a 1950 physician population of 204,450. Four miscellaneous publications, M-105 to M-108, were published during the year. Miscellaneous publication M-105, "State Polls on the Coverage of Physicians Under Old Age and Survivors Insurance," summarizes the attitudes of thousands of members of the state medical associations on questions relating to the coverage of physicians under the OASI provisions of the Social Security Act. M-106, "Medical Care Expenditures and Prices, 1955," is a supplement to Bureau bulletin 99, which analyzed personal consumption expenditures for the period 1929-1953. Material from both bulletin 99 and M-106 has been widely quoted. Publication M-107 is a reprint of an editorial from THE JOURNAL concerning the five-year study discussed above. The fourth publication, M-108, "Anderson Versus the U. S. Department of Commerce," reviews a national survey sample of 2,809 families done by the Health Information Foundation on family medical costs, insurance coverage, and benefits.

Other Activities

The Director and the Associate in Economics, Mr. Leonard W. Martin, participated in several programs, among which were a discussion of medical economics before first-year students of a medical school, several addresses before state and county medical societies, and the presentation of a paper on physician mortality before the annual meeting of the Conference of Actuaries in Public Practice. This paper on physician mortality was published in the proceedings of the conference.

The Director also participated in the 10th Tax Conference of the Canadian Tax Foundation in Montreal, discussing pensions for the self-employed. In April, 1957, the Canadian Parliament did pass a counterpart to the Jenkins-Keogh bills; Great Britain had done so late in the summer of 1956. The Director, with the approval of the General Manager, became a member of the Advisory Council of the National Awards Competition of which Mr. Herbert Hoover is the chairman. The essay contest is an activity of the Foundation for Voluntary Welfare, and is designed to encourage private activities and organizations in the field of social welfare. The Director continues to be a member of the Advisory Committee to the U. S. Bureau of Labor Statistics on the indexes of consumer and wholesale prices.

Four Months Down Under

The Director was granted a leave of absence by the Board of Trustees to make a study in Australia and New Zealand. He left Chicago on Jan. 7 and returned on May 18. Most of the travel and other expenses were financed by a grant-in-aid from a research foundation. A full-scale report of this research project will be presented in THE JOURNAL, probably in three or four separate articles.

Directory-Biographical Department

The Directory-Biographical Department carries on not only the work of compiling and distributing the American Medical Directory but also the equally important task of maintaining biographical records for the convenience and information of other departments, councils, and bureaus of the Association, the medical profession, and the general public.

The sale of the 19th edition of the Directory, which was issued in June, 1956, reached a total of 16,405 copies by July 1, 1957, and it is expected that the few hundred copies remaining in stock will have been sold before the 20th edition becomes available in September, 1958.

An analysis of the subscriptions received for the Directory demonstrate that the book fulfills a professional, rather than a commercial, need. A comparison of the sale of the last two editions indicates the following distribution of copies:

	1956 Edition, %	1950 Edition, %
Physicians	42	54
Hospitals, clinics	22	18
Commercial organizations	15	12
Insurance companies	5	3
Libraries	4	2
Federal agencies	3	2
Medical schools	3	2
Miscellaneous	6	7
	100	100

In addition to the income received through the sale of the Directory, revenue to help defray the cost of compilation is received from subscribers to the *Directory Report Service*. This supplementary service is offered on subscription and service-fee basis to large mailers of circular material and to seven authorized addressing companies, providing semimonthly reports of changes recorded in the biographical files.

From the time that the forms closed on the 1956 edition of the Directory, the Directory Report Service has included information on 17,721 physicians added to the biographical records. It has also recorded 62,792 changes of address (of which 40,130 were changes from one city to another, and 22,630 were local changes), 14,537 other changes not involving the address, and it has listed the names of 6,041 physicians who have died.

Simultaneously with the recording of such changes during the past year, preparations have gone forward to provide for the publication of the 1958 edition from IBM records instead of from manual card files. It was necessary, therefore, to convert to a machine record the manual card (classified card) maintained for each physician.

The work of verifying the data on the classified card, which contains the information published in the Directory, began April 1, 1957, and is scheduled to be completed in September, 1957. The resulting IBM card will be used, for this edition, as copy for production of the book by letterpress methods.

The new, 20th edition will differ in several respects from previous editions of the Directory. The book will omit the medical practice acts of the states and provinces, and will list only one address for each physician. Previous editions included the residence address as well as one or more office addresses.

Another major change will be the deletion of membership symbols. The names of members of the American Medical Association and of the Canadian Medical Association will be listed in capital letters; the names of all other physicians will be printed in lower-case letters.

Because of limitations of space, the middle names of physicians will be reduced to initials in both the body of the book and the index. In this edition, physicians temporarily on active duty in government service will be listed in the front section of the book, along with career officers. One specialty—aviation medicine—has been added to the list of approved specialties.

Among the important additions to the new Directory will be a numbered code to show the type of practice, indicating whether the physician is or is not in private practice, and his type of practice within these two areas. To facilitate the compilation of the book, a cut-off date of July 1, 1957, was adopted for most of the data to be used in the 1958 Directory. Specialty practice will also be included in the data of each physician who has furnished this information.

Despite the concentration of effort on the conversion of records to IBM cards, the Department during the past year continued to serve as a clearing house of information on the medical profession. Information is supplied in answer to a volume of telephone and mail inquiries; applications forwarded by constituent associations, examining boards in medical specialties, and national organizations are checked; and statements made on license applications are verified. The Department, principally through the semimonthly Directory Report Service, furnishes the basic information for the IBM files maintained for statistical purposes by the Bureau of Medical Economic Research.

The Department also works closely with the Bureau of Investigation, supplying biographical information to assist the Bureau in verifying the identity of persons on whom inquiries have been received.

The Directory-Biographical Department regularly checks, for various headquarters units, information on members, authors, participants in meetings and conferences, prospective advertisers, and other correspondents. Every effort is made to supply, insofar as facilities are available, the information on the medical profession requested by alumni associations, medical societies, and allied organizations.

Machine Records Systems Department

The Machine Records Systems Department was originated on Aug. 6, 1956. The Department was established to (1) adapt to machine processing as many of the Association's records as appear feasible; (2) coordinate and integrate the various records maintained by the American Medical Association in the most efficient and economical manner possible, and, consequently, eliminate duplication of effort by individual departments; and (3) process statistical studies by machine methods for any department desiring such service.

An IBM methods analyst was hired and appointed as coordinator of the Machine Records Systems Department. The machine room supervisor was appointed as his administrative and technical assistant.

The initial major task of the department was the conversion of the manually maintained Directory Department records to machine processing. This task is in the advanced stages of accomplishment. The index and biographical data sections of the next Directory will be produced from copy prepared from IBM tabulating cards.

American Medical Association membership, American Medical Education Foundation, and intern-residency records are already maintained on machine-processed punched cards.

Numerous special statistical reports were processed for the Law Department, Bureau of Medical Economic Research, Business and Advertising Department, and the Council on Medical Service.

Respectfully submitted,

Edwin S. Hamilton, M.D., Chairman.
Leonard W. Larson, M.D., Vice Chairman.
Julian P. Price, M.D., Secretary.
James Z. Appel, M.D.
F. J. L. Blasingame, M.D.
George M. Fister, M.D.
Hugh H. Hussey Jr., M.D.
Raymond M. McKeown, M.D.
Cleon Nafe, M.D.
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Jesse Hamer, M.D.
J. J. Moore, M.D.
E. Vincent Askey, M.D.
Louis M. Orr, M.D.

REPORT OF THE JUDICIAL COUNCIL

To the Members of the House of Delegates of the American Medical Association:

Activities During Past Year

This report covers the activities of the Judicial Council from July 1, 1956, to June 30, 1957. During that period the Judicial Council has held two meetings. Through the cooperation of inquirers and because of the geographical location of parties to the appeals considered, it was possible during the past year to arrange agendas so as to obviate the necessity of additional meetings.

The members of the Council have on several occasions addressed student bodies of medical schools on the subject of medical ethics, and the Chairman of the Council has participated as a member of the Commission on Medical Care Plans.

Jurisdiction of Council

Some time ago, after an appeal to the Council had been decided, the unsuccessful party asked why the jurisdiction of the Council was limited to questions of law and procedure and did not extend to questions of fact.

The House of Delegates established the limitation of the jurisdiction of the Council, which does not differ greatly from jurisdiction of our civil appeal courts. Until the House changes the jurisdiction, the Council and members of the Association are bound by it.

The purpose of the limitation, essentially, is to prevent the appellate body from substituting its judgment on the facts for the judgment of the trier of the facts. The reason for this is that the trial body sees and hears the witnesses and their evidence. It determines the truth from that which has been physically before it. In the case of an appeal, which is heard on a record of what was said at the trial level, there is no opportunity to hear and see witnesses. The record is reviewed to make certain that the facts available to the trial body were material and sufficient to support the finding which it reached; to insure that required procedures were followed and that the law was applied properly.

Revised Principles of Medical Ethics

One of the most significant developments of the past year was the adoption by the House of Delegates of a revision of the Principles of Medical Ethics. At this time the Council believes it would be well to make a few observations concerning this action of the House. First and foremost it must be understood and remembered that the 1957 edition of the Principles was not intended to and does not abrogate any ethical principle expressed in the 1955 edition of the Principles of Medical Ethics of the American Medical Association. The format and language of the 1955 and 1957 editions differ; certain items dealing with professional manners and etiquette have been eliminated. However, the basic ethical concepts they include are identical. Therefore, no opinion or report of the Council interpreting these basic principles which were in effect at the time of the revision has been rescinded by the adoption of the 1957 Principles.

The Council is advised that the director of the Association's Department of Public Relations is planning to distribute a special printing of the new Principles to the members of the Association with their new membership cards This action is commendable. The Council expresses its appreciation to the Director of that department.

Obligation to Apply the Principles

The Principles of Medical Ethics are guides. They shoul be observed. When, however, there is clear, continued, o flagrant disregard of their provisions it is necessary, for th protection of medicine's ideals, that they be enforced. Th is a duty of the local medical society. An errant physician own colleagues in his own local society must gather t facts and weigh them, and then mete out appropriate san tion or punishment if warranted—no matter how onerous how distasteful the task may be.

Some time ago the Council was confronted with a sit ation in which charges alleging solicitation of patients we filed with an ethics committee of a county society. This com mittee reported in writing to the society that it did not thin it should take any action because of the prominence of t accused in the society and in the community. It recom mended that the society as a whole consider the charges. Th society in turn voted to refer the matter in its entirety t the councillor of the district. He in turn promptly referre the matter to the president of the state society who just a promptly requested that the Judicial Council decide whethe or not the accused was guilty of soliciting patients. Th Council advised that it could neither pass judgment on a matter about which it did not have all the facts nor could it prejudge a matter which might later come before it on appeal. When the Judicial Council refused to assume jurisdiction the president of the state society, castigating the Judicial Council, wrote: "If there is one thing that is prevalent in this country it is procrastination. Things which should be settled are referred to committees or a new committee is appointed to handle this particular problem, and time marches on!"

With this statement the Council could not agree more The responsibility of this ethics committee was to decide a simple question. Its authority to do so lay in the fact th the members of the committee were the duly appointed peers of the accused doctor, who had or who could obtain all the relevant evidence relating to the charge. It was a body before whom the accused could appear, hear the charges brought against him, and offer his defense. While it is never pleasant to find a colleague guilty and impose punishment, this is a responsibility falling on some of us.

Local committees charged with hearing complaints alleging unethical conduct are under no obligation to find every accused guilty. Often they may and should find that ethical principles have not been violated. And when they do have to find a colleague guilty of unethical conduct they should remember the accused has the right of appeal, the right to have the judgment reviewed to correct any error inadvertently made. If local societies fail to curtail unethical practices, ethics lose their effectiveness. Failure on the part of the component society to demand respect for and adherence to the Principles breeds contempt and disrespect for them.

Now that the Association has adopted the short, broad statement of ethical principles it becomes even more important for each component society to discharge its duty concerning their application.

Dr. Walter F. Donaldson

Dr. Walter F. Donaldson, one of our most loved and revered colleagues, passed away during the past year. Of him and his devotion to organized medicine we need say little. His record of unselfish service is known to all. We who were privileged to have served with him most recently were keenly aware of the wisdom he possessed and the humility and kindness that were his. With all who knew him we can say we have benefited by our association with him. We extend our condolences to his family and assure them that Dr. Donaldson lives on in the hearts of his countless friends.

Respectfully submitted,

Homer L. Pearson Jr., Chairman.
Louis A. Buie.
J. M. Hutcheson.
Robertson Ward.
G. A. Woodhouse.
George F. Lull, Secretary.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association:

The Council on Medical Education and Hospitals submits the following report covering the period from July 1, 1956, to June 30, 1957.

The Council continues to concern itself with the various matters referred to it by the House of Delegates and in the conduct of its multiple established functions. The latter include the survey and evaluation of medical schools; survey and evaluation of graduate medical education conducted through internships, residencies, and fellowships; the collection and compilation of data on and listing of postgraduate opportunities in medical education; and the evaluation and listing of education and training opportunities in certain technical areas related to medicine. In conducting these activities, the Council and its staff have endeavored to contribute to and stimulate continuous study and progress in medical education at all levels. Such functions have necessitated consultations, conferences, collaboration, liaison, and intercommunication with many individuals and groups representing medical schools, hospitals, governmental and nongovernmental agencies, organizations, and institutions interested in and concerned with medical education in some or all of its aspects. Accreditation of undergraduate and graduate educational and training programs in the field of medicine, together with the collection, compilation, and dissemination of statistical and other information concerning medical schools, internships, residencies, postgraduate courses, medical licensure, and related matters have all been conducted in accord with established custom.

In collaboration with representatives of the Association of American Medical Colleges, the Council has prepared a new document on the "Functions and Structure of a Modern Medical School" to replace the former "Essentials of an Acceptable Medical School." This statement which was adopted by the House of Delegates at the meeting in New York (June, 1957) represents the general philosophies and concepts of the two collaborating agencies. It has been developed primarily as a general, rather than specific, guide to assist in attaining medical education of high standards in keeping with modern knowledge and needs. The Council through an Ad Hoc Advisory Committee on Postgraduate Medical Education formulated "A Guide Regarding Objectives and Basic Principles of Postgraduate Medical Education" which was approved by the House of Delegates (June, 1957) and has subsequently been published. A document has been prepared on the "Background and Development of Residency Review and Conference Committees" to furnish the profession with an authoritative resume of the growth and current status of this important cooperative function of the Council with the Boards in Medical Specialties. In a special committee with representation also from the Association of American Medical Colleges and the American Academy of General Practice, the Council is currently engaged in a long-range comprehensive study of the best background preparation for general practice.

The pursuit of other established functions has necessitated continued studies in relation to the relative merits of straight versus rotating internships, the report of findings and recommendations to the House of Delegates which resulted in authorization for continued approval of outstanding straight internships. A new joint committee of the Board of Trustees and Council has been established to study the area of paramedical activities in relation to medicine. There has been a general reorganization of the activities of the Feld Staff as the Council's former responsibilities to the Joint Commission on Hospital Accreditation were discontinued (recommendations of the Stover committee approved by the House of Delegates). The Council cooperated in planning Medical Education Week, and with other councils, bureaus, and committees in various activities and studies. The Council is actively participating with the planning committee for the second World Conference on Medical Education scheduled to be held in Chicago during the summer of 1959.

In February, 1957, the Council undertook the major responsibility for the program of the 53rd Annual Congress on Medical Education and Licensure which again brought together the largest group of representatives from medical education, boards of medical licensure, boards of medical specialties, hospital administrators, etc., ever to attend such a program. The steady growth of attendance at the Annual Congress on Medical Education and Licensure indicates its increasing value as a forum for presentation and discussion of problems centering around medical education, licensure, and practice.

Matters Referred to the Council by the House of Delegates

In June and December, 1956, and again in, June 1957, the House of Delegates referred a number of resolutions regarding straight and rotating internships to the Council for study and action. Information on these matters is reported under the Internship section of this report.

Resolution 30 introduced by the California delegation at the June, 1957, meeting was directed toward certain problems in inspection and accreditation of programs of graduate education and training.

The Reference Committee was informed that the intent of many of these resolutions has already been the policy of the Council. In the conduct of evaluation of graduate medi-

University of Mississippi School of Medicine
Medical College of Georgia
University of Miami School of Medicine
Albany Medical College
University of Florida College of Medicine
University of Missouri School of Medicine
St. Louis University School of Medicine
Laval University Faculty of Medicine
University of Saskatchewan College of Medicine

The University of Pittsburgh had also been scheduled for visit during 1956-1957, but this was postponed on request f the university officials until 1957-1958. It will be of interest to the House of Delegates to know that three of the chools receiving approval of the Council on Medical Eduation and Hospitals during 1956-1957 represented instituions graduating their first classes of physicians at the close f this academic year (Mississippi, Missouri, and Saskatchwan), thereby adding three more schools to the list of our-year approved institutions in the United States and Canada. This does not increase the total number of approved nedical schools, for all three of these institutions had preiously been conducting approved two-year basic medical cience programs. The approval of these new four-year prorams does, however, reduce the number of approved basic nedical science (two-year schools) in the United States rom six to four and has upgraded the last of such schools Canada to full four-year medical school status. At the resent time there are 78 fully approved four-year schools of nedicine and 4 fully approved two-year basic science schools n the United States. Four completely new schools developng complete four-year programs are in various stages of lanning and development (Albert Einstein, Seton Hall, Jniversity of Florida, University of Kentucky). In accord vith established policy, liaison studies are now made at newly developing medical schools annually until the program nerits full four-year approval. Albert Einstein School of Medicine which had its first two years in operation at the ime of the liaison survey has been given such provisional pproval.

The Council has been requested to participate in liaison vith the Association of American Medical Colleges to make study of San Antonio as a potential site for the development of a new four-year school. Plans are being made to onduct this study during the fall of 1957.

The provisional schedule for liaison surveys to medical chools during the 1957-1958 academic year includes the ollowing institutions:

Dalhousie University Faculty of Medicine
Dartmouth Medical School
University of Manitoba Faculty of Medicine
Johns Hopkins University School of Medicine
University of Pittsburgh School of Medicine
University of Kentucky School of Medicine
College of Medical Evangelists
Woman's Medical College of Pennsylvania
[illegible] licine and Dentistry
[illegible] Medicine
[illegible] chool of Medicine
University of Chicago School of Medicine
University of Florida School of Medicine
University of Arkansas School of Medicine
University of Michigan School of Medicine

A detailed statement on the status of medical education the United States and Canada is in preparation at the me this report is being prepared. Members of the House of Delegates are respectfully referred to this Annual Report on Medical Education in the United States and Canada which ill appear in the Nov. 16, 1957, issue of THE JOURNAL.

1957 Congress on Medical Education and Licensure

The 53rd Annual Congress on Medical Education and icensure was held Feb. 10-12, 1957, at the Palmer House Chicago. It was attended by the largest group of individals ever to register at one of these annual sessions. Each ear there is increased interest in the Annual Congress as a nedium for presentation and discussion of important current problems in the fields of medical education and licensure. The first half-day program was devoted to the topic of Graduate Medical Education for General Practice—1957 and was co-sponsored by the Council and the Advisory Board for Medical Specialties. During this session the concept of the modern role of undergraduate medical education in preparation for graduate education was presented. A statement regarding the type of graduate training considered to be essential for the general practice of medicine today was presented, and this was followed by a series of presentations of the kind of training in the fields of medicine, surgery, pediatrics, obstetrics-gynecology, psychiatry, etc., that should be part of preparation for general practice today.

The second half-day session was devoted to consideration of some of the problems of projecting needs of medical education for tomorrow. An outstanding group of speakers presented during this session what has been generally reported by those in attendance as the most significant single half-day contribution in memory. The Council expresses the hope that the group of papers presented during this session and which were published in the June 1, 1957, issue of THE JOURNAL will be read by members of the House of Delegates.

The remaining half-day of the Congress for which the Council was responsible was devoted to a Conference on Postgraduate Medical Education during which a number of experimental approaches to this important field were presented. The current activities of the Council in the field of postgraduate medical education were reported at this meeting.

The remainder of the Congress was devoted to activities of the Federation of State Medical Boards of the United States and the Advisory Board for Medical Specialties. During this Congress, the federation held its First Examination Institute Covering Obstetrics and Gynecology.

In planning material for consideration at the Annual Congress on Medical Education and Licensure, the Council, the Advisory Board for Medical Specialties, and the federation endeavor to highlight important current problems in the various phases of medical education and licensure. It is believed that the Annual Congress should serve as a forum for presentation and objective discussion and evaluation of matters of major concern involving such areas.

Committee Activities of the Council

Numerous standing and special committees of the Council are assigned to designated functions and are engaged individually or in cooperation with organizations concerned with certain areas of its activity in conducting studies, submitting reports and recommendations, or conducting delegated responsible assignments.

Standing Committees

Liaison Committee on Medical Education cooperating closely with the executive council of the Association of American Medical Colleges.

Liaison Committee with the Advisory Board for Medical Specialties which is concerned with matters of mutual interest to the Council and the Advisory Board.

Committee on Essentials which is responsible for review, revision and recommendations regarding the Essentials and guides underlying the various educational programs involving approval or accreditation by the Council.

Residency Review Committees and Conference Committees. Each committee includes representatives of the particular specialty board and the Council and in certain instances representation from the American College of Surgeons and the American College of Physicians. (See Section on Residency Review Committees.) They meet from one to three times annually to review and take action concerning approval of graduate education and training programs (residencies and fellowships) in their respective fields. Council staff personnel function as secretaries of each of the committees and conduct their administrative functions. These committees include:

Residency Review Committee for Anesthesiology
Residency Review Committee for Dermatology
Residency Review Committee in Internal Medicine (tripartite)
Residency Review Committee for Neurological Surgery
Residency Review Committee for Ophthalmology
Residency Review Committee for Orthopedic Surgery
Residency Review Committee for Otolaryngology (tripartite)
Residency Review Committee for Pediatrics
Residency Review Committee for Physical Medicine and Rehabilitation
Residency Review Committee for Plastic Surgery (tripartite)
Residency Review Committee for Preventive Medicine
Residence Review Committee for Proctology
Residency Review Committee for Psychiatry and Neurology
Residency Review Committee for Radiology
Conference Committee on Graduate Training in Surgery (tripartite)
Residency Review Committee for Urology.

Such committees have not yet been developed in the areas of obstetrics and gynecology, thoracic surgery, or pathology.

In liaison with the Commissions on Education and Hospitals of the American Academy of General Practice, the Council has established a Residency Review Committee in General Practice.

The Internship Review Committee studies and evaluates internship programs and recommends action regarding their status to the Council.

Advisory Committee on Physical Therapy Education.

Advisory Committee on Occupational Therapy Education.

(Each of these important committees functions as the major advisory group to the Council on appraisal of educational programs and suggested revisions in criteria for training. Each group is composed of nine physicians appointed by national medical organizations having a particular interest in rehabilitation and three therapists who serve as liaison for their professional associations.)

Special Committees

Ad Hoc Advisory Committee on Postgraduate Medical Education which has completed preparation of the "Guide Regarding Objectives and Basic Principles of Postgraduate Medical Education" and is currently engaged in studying how the Council can best contribute to this important aspect of Medical Education:

Program Committee Planning Second World Conference on Medical Education to be held in Chicago in 1959.

Committee on Preparation for General Practice. A special committee with representatives of the Council, the American Academy of General Practice, and the Association of American Medical Colleges, engaged in a long-range study of the best background preparation for general practice.

Committee on Licensure cooperating with the Federation of State Medical Boards and the Association of American Medical Colleges.

Joint Committee of the Board of Trustees and the Council to study paramedical areas in relation to medicine.

In addition members of the Council and/or its staff actively participate as members or officials of other organizations concerned with problems closely related to or impinging upon the field of medical education, such as:

Joint Commission on Accreditation of Hospitals
National Intern Matching Program
National Fund for Medical Education (Advisory Council)
American Medical Education Foundation
National Board of Medical Examiners
Federation of State Medical Boards of the United States (Bulletin)
Selective Service System
Education and Training Division, Surgeon General's Office Department of the Army
Education and Training Division, Surgeon General's Office U. S. A. F.
Experimental Training Grants Committee, National Institutes of Health

The Council and its staff collaborate with many organizations and agencies which have interest in one or more aspects of medical education. Intercommunication between the Council and these various groups directed towards mutual understanding and collaboration is one of the demanding functions of the Council in terms of time, energy and basic significance from the standpoint of professional and public relations.

Internships

The Internship Section is responsible for the compilation of data regarding approved intern training programs which are presented in the Internship and Residency Number of The Journal as the Annual Report on Internships and Residencies. This report includes statistical data and other specific information on all hospitals approved by the Council for the training of interns. All other activities regarding intern training programs for which the Council is responsible are handled in this section. The assistant secretary in charge acts as secretary of the Internship Review Committee.

The section works closely with the National Intern Matching Program, collaborating with the program in the correlation of its activities with those of the intern programs of the Council.

According to a resolution introduced in June, 1956, and adopted by the House of Delegates, the Council was requested to encourage rotating internships rather than straight internships, and was instructed to report to the House on this subject at the next annual session.

In line with these instructions, the Council deferred action on new applications for straight internships until it could make a study of the situation and the status could be clarified. This study was completed early in 1957, and reported to the House of Delegates at its session in June, 1957.

The complete report of the study was published in The Journal (May 4, 1957, page 64). At its meeting in June, 1957, the Council studied this report carefully and reaffirmed its previous opinion: "While it is the opinion of the Council that the best basic education is provided by a well organized and conducted rotating internship, it also believes that straight internships may be justified in the fields of medicine, surgery, pediatrics, and pathology for those medical school graduates who have definitely determined to follow a specialized or academic career." The Council recommended that straight internships in medicine, surgery, pediatrics, and pathology be continued. This recommendation was concurred in by the Reference Committee on Medical Education and Hospitals. The Reference Committee also considered a resolution regarding straight internships in obstretrics-gynecology. Previous action taken discontinued straight internships in this field June 30, 1957. The Committee further recommended that consideration be given by the Council to applications for approval of straight internships in obstetrics-gynecology when such programs are of superior educational content and comprehensive scope. The recommendations of the Reference Committee on Medical Education and Hospitals were adopted by the House of Delegates. The Council was authorized to accept new applications for approval of straight internships in medicine, surgery, pediatrics, pathology, and obstetrics-gynecology. A hospital requesting approval for straight internships in these fields must be approved for resident training in the specialty in which the straight internship is desired. A survey of the proposed program of training will be made by a representative of the Council. The program and report of survey will then be considered by the Internship Review Committee at its next meeting, and the Council can act upon the recommendation of this Committee.

It is pointed out that the adoption of the recommendations of the Reference Committee on Medical Education and Hospitals by the House of Delegates may result in an increase in the number of approved straight internships. The Council will exert every effort to ascertain that only programs of merit fully justifying consideration will be granted straight internship approved status.

On Sept. 1, 1956, 852 hospitals offered 1,101 approved intern training programs, involving 11,895 positions.

Internship Review Committee

Membership in the Internship Review Committee is composed of representatives from the Council on Medical Education and Hospitals, the Association of American Medical Colleges, the American Hospital Association, the Federation of State Medical Boards of the United States, the American Academy of General Practice.

The committee was formed in 1954 to review reports of surveys of intern training programs and make recommendation to the Council for appropriate action. The committee also may make recommendations to the Council for changes in the requirements for approval of an internship and for changes in policy concerning the education of interns.

Since the committee was established, it has advocated that the Essentials of an Approved Internship be interpreted with reasonable flexibility. It has followed the policy of giving a hospital an opportunity to correct deficiencies found on survey before approval is actually withdrawn; the hospital is advised concerning the nature of the deficiencies and is encouraged to correct them as quickly as possible.

The objective toward which the committee is working is to maintain and improve the standards of medical education at the internship level.

National Intern Matching Program

The National Intern Matching Program continues to serve as the central clearing agency for hospitals seeking interns and for medical students desiring internships. For the past six years, hospitals approved for intern training by the Council on Medical Education and Hospitals and medical students seeking first year internships have used the NIMP as the official agency for intern procurement. The plan gives complete freedom of choice to both hospitals and students and has received continued support from both groups.

Hospitals approved by the Council submit a hospital agreement to the program in which they agree to interview only students who participate in the program and to accept all interns matched to them. Students submit similar agreements, stating they will apply only to participating hospitals and will accept the hospital to which they are matched. Hospitals and students make contact with each other by means of the NIMP Directory. Hospitals receive a directory of all participating students, and students receive a hospital directory, in which are listed all participating hospitals and the type and number of internships each offers. Hospitals are free to interview as many applicants as possible, using any means of evaluation they desire.

The Matching Program has matched more than 35,000 students with no reported error to date. The policies and general management of the program are governed by the organizations most interested in medical education at the intern level. These organizations include, in addition to the Council on Medical Education and Hospitals, the American Hospital Association, the Association of American Medical Colleges, the Catholic Hospital Association, the American Protestant Hospital Association, and the Student American Medical Association. Further assistance is given by liaison representatives from the Army, Navy, Air Force, and the Public Health Service.

The program covers internships beginning between April 1 and Dec. 31. In Program VI for 1957 internships, 822 hospitals offered 11,804 positions, while 6,923 students participated in the program. Of this number, 6,539 (94%) were matched. Of the matched students, 89% went to hospitals of their first or second choice. Conversely, 90% of the hospitals received medical students whom they had selected as first or second choice. Hospital and student participation set a new high in this year's program. With continued cooperation and support, the Matching Program will have even greater participation during the coming year.

Residencies

At the present time approval of programs for residency training may be granted in 28 specialty areas. This includes three preventive medicine specialties: aviation medicine, occupational medicine, and public health. Separate approval is offered in obstetrics and gynecology, or in a combined obstetrics-gynecology program. Likewise, approval is granted to separate or combined programs in psychiatry and neurology.

During the past year, no new residency programs in malignant disease or contagious disease have been approved. Former separately approved contagious disease programs have been integrated with, or are in the process of being integrated with, residencies in internal medicine and pediatrics. Approval of separate programs in malignant disease is also being discontinued, as they are incorporated into other residencies. However, malignant disease programs are listed in the 1957 Internship and Residency Number of The Journal, and approval will not be discontinued until June 30, 1959, to assure ample time for the incorporation of this training into residencies in the specialties.

The policy of requiring residency training programs to provide full training in a specialty—either intramurally or through affiliation with another program—has been adopted in numerous specialties. For sometime, this policy has been in effect for programs in anesthesiology, general surgery, otolaryngology, plastic surgery, and in the medical subspecialties of allergy, cardiovascular disease, gastroenterology, and pulmonary disease. To these specialties requiring full training have been added programs in pediatrics, orthopedic surgery, radiology and urology. Consideration is being given currently to adoption of this requirement in other specialty fields.

These policies have been adopted to preclude the possibility of a resident's taking his training in two or three isolated programs with no assurance of continuity of supervised experience or progression of responsibility. Hospitals which offer residencies in these specialties may offer periods of training of varied length; however, these residencies provide training as a part of a coordinated and integrated educational experience. The Council considers the principle of continuity in full training programs to be eminently sound, and supports efforts directed toward this end.

On Sept. 1, 1956, 1,199 hospitals offered 5,134 approved residency training programs, involving 28,528 positions.

Residency Review Committees

During the past year the Residency Review Committee for Anesthesiology, composed of representatives of the American Board of Anesthesiology and of the Council, was organized. This, with the committees in dermatology, neurological surgery, ophthalmology, orthopedic surgery, pediatrics, physical medicine, preventive medicine, proctology, psychiatry and neurology, radiology, and urology, makes a total of 12 committees representing the appropriate American boards and the Council. Committees in surgery, plastic surgery, and otolaryngology include representatives of the American College of Surgeons, and the Committee for Internal Medicine includes representatives of the American College of Physicians. The Committee for General Practice is made up of representatives of the American Academy of General Practice and of the Council. These review committees meet at regular intervals to review residency programs in their particular specialty fields and to approve or disapprove the programs. Three specialties (obstetrics-gynecology, pathology, and thoracic surgery) and four medical subspecialties (allergy, cardiovascular disease, gastroenterology, and pulmonary disease) remain in which the Council approves programs in concurrence with the specialty or subspecialty board concerned, each organization taking unilateral action.

On the basis of experience with the various review committees, the Council has prepared a guide of suggested structure and function for use by the committees, in the hope that a greater degree of uniformity may be established. This guide is flexible and can easily be adapted to meet the needs and wishes of each committee. Furthermore, some of the Residency Review and Conference Committees are engaged in the preparation of "guides" concerning the general over-all concept of the graduate training in the specific field concerned. These are being designed with the objective of assisting those responsible for the organization and supervision of the graduate training programs so that they may most effectively meet committee requirements for approval.

Graduate Medical Education

The Council is responsible for continuous study and concern in the maintenance of appropriate standards in medical education at the graduate level. It collaborates with the American Specialty Boards, the Advisory Board for Medical Specialties, the American Academy of General Practice, the American College of Physicians, and the American College of Surgeons through review committees which are liaison bodies for maintaining standards of training in the internships and residencies. (See Section on Residency Review Committees.) The Council conducts a survey program for these educational activities, whereby each hospital approved or applying for approval for a graduate training program is surveyed at intervals of approximately two to three years.

The Council staff, in the office and in the field, act in the capacity of consultants and advisors in graduate medical education, endeavoring to provide assistance through personal conferences and by correspondence to the medical staffs and administrators of hospitals desiring new training programs or reorganizing previously established programs.

In addition to the liaison with the organizations mentioned above, the Council works closely with the National Intern Matching Program, the educational services of the several federal agencies, and other organizations interested in and concerned with medical education at the graduate level.

The Council compiles data concerning internships and residencies and publishes this material in THE JOURNAL each fall as the Annual Report on Internships and Residencies. This report includes an up-to-date listing of all hospitals offering approved intern and/or residency training. The Residency Information Bulletin, which lists the available residency positions in approved hospitals, is published at four-month intervals. The Essentials of Approved Internships and Residencies are revised as necessary and are published as approved and authorized by the House of Delegates. In addition, there are several other pamphlets concerning graduate medical education which are revised and published as needed, such as the "Consolidated List of Approved Internships" and "Hospital Medical Library Suggestions."

Hospital Survey Program

Prior to Jan. 1, 1957, the field staff of the Council acted in a dual capacity. Not only did they survey the educational programs given in a hospital but in many instances they represented the Joint Commission on Accreditation of Hospitals and surveyed hospitals for that organization also. The Joint Commission is primarily concerned with the organizational and administrative aspects of the hospital, and with the professional activities of the medical staff; whereas the primary purpose served for the Council is to act in the capacity of consultant with regard to programs of training for interns and residents.

The report of the Stover Committee, which studied the Joint Commission and reported to the House of Delegates of the American Medical Association in June, 1956, recommended that the Joint Commission employ a staff of physicians for these surveys, and that the field staff of the Council on Medical Education and Hospitals confine its work to surveys of the educational programs in hospitals.

Effective Jan. 1, 1957, the field staff of the Council discontinued surveys for the Joint Commission. The number of Council representatives was reduced from nine full-time physicians to six. On Aug. 1, 1957, five field representatives were serving the Council. The full quota of six is expected to be on duty about Oct. 1.

The Council's field representatives are carefully selected on the basis of their interest, knowledge, and experience in the field of medical education; and their ability to represent the Council with firmness, tact, and diplomacy. It is pointed out that this group of physicians are not a policing body in any sense of the word. Their function is to act as consultants regarding intern and resident training programs, helping hospital administrators and medical staffs to analyze and understand their problems, and assisting them toward interpretation of the standards of graduate medical training. The responsibility for reviewing programs of intern and resident training is a very important one, and requires an intelligent and constructive approach. The approval program of the Council depends to a large extent on the efficiency and effectiveness with which its representatives carry out their obligations.

Each field representative is assigned a definite territory, which includes from 200 to 250 hospitals approved for graduate training. He is directly responsible for the evaluation of these programs at intervals of two or three years.

In the table quoted below, a comparison is made of the survey activities of the Council on graduate education for the fiscal year ending 1956 and fiscal year ending 1957.

	7/1/55 to 6/30/56	7/1/56 to 6/30/57
Hospitals visited	809	793
Joint Commission surveys	451	159
No. of internships reviewed	330	288
No. of residencies reviewed	2,291	1,922
Technical school surveys	4	6
Total procedures	3,076	2,375
Total A. M. A. procedures	2,625	2,216

The table quoted below is for the fiscal year ending June 30, 1957, and is divided into two equal periods of six months each. During the first six months, the Council field staff surveyed programs for the Joint Commission. This activity was discontinued during the second six months. It is interesting to note that the total A. M. A. procedures accomplished in the second half of the year exceeded those done in the first half by an approximate 25%. The Council gratefully acknowledges the untiring efforts of the field staff in the field of graduate medical education.

	7/1/56 to 12/31/56	1/1/57 to 6/30/57
Hospitals visited	363	430
Joint Commission surveys	159	...
No. of internships reviewed	133	155
No. of residencies reviewed	844	1,078
Technical school surveys	4	2
Total procedures	1,140	1,235
Total A. M. A. procedures	981	1,235

Postgraduate Medical Education

During the past year, the Council has continued its previous activities as well as intensified its studies of this field in order that it may help provide the stimulus and leadership in cooperation with other medical groups that will assure adequate opportunities for the continuing education of physicians. It is generally recognized that there is a significant relationship between the continuing medical education which a physician acquires each year and his ability to render the best possible medical care to his patients. With advances in scientific medical knowledge coming at an increasingly accelerated pace, the provision of educational opportunities adequate in both quality and quantity is assuming much greater importance.

In order to ascertain the most useful approaches to the olution of problems in this field, the Council early in 1956 ought and obtained from the Board of Trustees authoriza-ion to appoint an Ad Hoc Advisory Committee on Postgraduate Medical Education composed of leaders in the profession having a diversity of backgrounds and viewpoints n practice and in medical education. This Committee began ts work in April, 1956, as reported last year and is coninuing to function. The first recommendation of the Committee was the preparation of a Guide Regarding the Objectives and Basic Principles of Postgraduate Medical Education Programs, submitted to and approved by the House of Delegates with minor revision in June, 1957. This guide has since been published and sent to each approved medical school, to each hospital approved for residency or nternship, to medical societies, and to all other institutions and organizations known to be active in this field in this ountry. Despite the widespread mailing, additional requests or 2,000 copies of the guide have been received, making a otal distribution of 4,000 copies in the three month period ince June, 1957. The interest shown to date and the favor-ble comments received regarding the guide appear to be ymptomatic of the need for assistance in this phase of medical education.

The second recommendation by the advisory committee was that the Council give consideration to appraisal of postgraduate courses and, if a suitable appraisal mechanism were developed, apply the results of such appraisal to the preparation of the annual list of postgraduate courses published annually in THE JOURNAL of the American Medical Association. This would be consistent with the policy of the American Medical Association in listing medical schools, nternships, and residencies—a policy that has been productive of major educational advances. Such an appraisal would eem desirable in itself to indicate those courses that are educationally worthy of the physicians' time and money. It has been shown that courses of high quality stimulate the physicians attending to seek further education while a course of relatively little educational merit discourages the interest of the attending physicians in other programs of continuing medical education. Thus, it would appear that an effective way to increase the participation of physicians in postgraduate medical education would be to increase the educational worth of the programs. A continuing appraisal of postgraduate courses almost surely would attract thoughtful attention to the basic guide as well as provide an additional incentive for the sponsors of programs to improve their offerings. The annual list of unevaluated postgraduate courses and miscellany actually may be injuring the chances of raising educational standards in this field by giving tacit approval of some unworthy activities.

The Council believes that the reasons for considering appraisal of postgraduate courses are sound ones. At the present time, a pilot study is being conducted regarding a possibly suitable means of evaluating postgraduate courses accurately and with due regard to the flexibility in approach especially needed in this phase of medical education. A further report on this aspect of the Council studies will be made at a later meeting of the Association.

The Council has been active as a central point nationally for the collection and distribution of information regarding postgraduate medical education. A half-day was devoted to this field during the Annual Congress on Medical Education and Licensure in February, 1957. The papers given on nvitation were printed in the May 25 number of THE JOURNAL. The current list of postgraduate courses for physicians, published in THE JOURNAL, Aug. 17, for the year beginning Sept. 1, 1957, was 53 pages long, including a total of 1,084 courses, many of which are repeated several times during the year. In the Annual Report on Medical Education in the United States and Canada, published each year in THE JOURNAL, an analysis of the previous year's postgraduate medical education activities is discussed. A current study by the Council, as yet unpublished, is concerned with the geographical distribution of courses and of the physicians attending them in an effort to determine postgraduate medical education service areas. It is hoped that this information will be useful to cooperative efforts in this field as well as reveal disparities between supply and demand on a geographical basis.

Paramedical Education

Continuing advice and assistance is being given the Council by numerous organizations, such as the American Society of Clinical Pathologists and the American College of Radiology, in the development of sound criteria for training and approval of educational programs. Currently the Council is responsible for approval of schools for medical record librarians, medical record technicians, medical technologists, occupational therapists, physical therapists, and x-ray technicians. Vigorous resurvey procedures are progressing. Pathologists, appointed by the American Society of Clinical Pathologists, generously contribute their time and experience to surveys and resurveys of medical technology schools. Similarly, radiologists, appointed by the American College of Radiology, visit and revisit schools for x-ray technicians. The education director of the American Association of Medical Record Librarians has been very effectively active in visiting schools for medical record librarians and technicians. Joint physician-therapist survey teams are being activated in physical therapy and occupational therapy. The six initial surveys have been productive. Extremely helpful has been the activation of an Advisory Committee on Physical Therapy Education, and an Advisory Committee on Occupational Therapy Education. Of major significance is the creation of a joint Board of Trustees–Council committee to explore ways in which physicians might provide leadership in relationships with professions closely related to medicine to better assure total care of patients by qualified personnel under their supervision. An assistant secretary coordinates the Council's activities in paramedical education and is responsible for staff work on paramedical matters referred to the Council. The 1,282 currently approved schools include 33 for medical record librarians, 9 for medical record technicians, 657 for medical technologists, 29 for occupational therapists, 37 for physical therapists, and 517 for x-ray technicians.

Changes in Organization and Staff

In the field of medical education today it is impossible to segregate the activities of the Council into distinct and relatively unrelated areas such as undergraduate medical education on the one hand and graduate education and hospitals on the other. Medical schools with their faculties, facilities, and finances are inevitably involved in graduate and postgraduate medical education as well as in undergraduate education. They also are, in most instances, conducting one or more phases of the education and training involved in certain technical fields allied with medicine. Many hospitals conducting graduate education programs are also being utilized in the basic undergraduate education of medical students. Since the functions of the Council on Medical Education and Hospitals deal with the broad overall field of medical education, rather than solely with its isolated segments, it is of considerable importance that there be coordination, correlation, and even integration of the various facets of its activities. Consequently, during the course of the past year the Council staff has been reorganized to bring about such coordination and integration of its functions and to overcome the almost complete dichotomy between undergraduate and graduate education activities which had developed in recent years with the greatly expanded interest in the latter field. Thus, currently, graduate education and hospital activities are an integral phase of

Council activities in the same way as undergraduate and postgraduate function, rather than an independent relatively unrelated division.

Responsibility for conduct of the over-all activities of the Council is directly centered in the office of the Secretary with clean-cut delegation of responsibility and authority in the different areas of activity to key staff personnel. Regular staff conferences are held to discuss Council problems and to coordinate activities. Direct supervision of undergraduate medical education activities has been delegated to Dr. Walter S. Wiggins, who as Associate Secretary assists the Secretary in general Council administrative problems. Dr. Arthur N. Springall as Assistant Secretary coordinates the over-all activities in the area of graduate education, including general supervision of the preparation of the Annual Internship and Residency Number of The Journal. Assistant Secretaries Arthur N. Springall, John Hinman, and Willard V. Thompson cover the administrative functions of the Council in relation to Internship Review, Residency Review, and Conference Committee activities. Dr. Hinman also has the responsibility of general supervision of the Council's responsibilities in technical areas related to medicine. Dr. Glen R. Shepherd has direct responsibility for the conduct and supervision of Council interests in postgraduate medical education.

As Assistant to the Secretary, Mrs. Anne Tipner is directly responsible for office management and the supervision of stenographic, clerical, and secretarial personnel. She also carries the responsibility for basic preparation of the annual statistics on licensure and cooperates closely with the Federation of State Medical Boards. The rapid expansion of Council responsibility in connection with the development of the Internship, Residency Review, and Conference Committees in the field of graduate education and training has necessitated the creation of two new administrative assistant positions in this area. Adequate supervision and correlation of the enormous mass of data on internship and residency training has become a major facet of Council activity. Miss Elaine Ziech and Mrs. Rose Tracy conduct this phase of the work and facilitate the activities for which Drs. Springall, Hinman, and Thompson have supervising responsibility.

The action of the House of Delegates in December, 1956, requesting that the activities of the Council's field staff on hospital evaluation for accreditation by the Joint Commission be discontinued necessitated a major readjustment in this area. The reorganization of the Council's activities in this area have been presented in the section on Hospital Survey Program.

Publications by the Council

The Council is responsible for the collection and dissemination of information on medical and technical areas of education; the latter responsibility is accomplished through preparation of material for special issues in The Journal on the following subject matter:

Medical Licensure Statistics (1956), May 25, 1957
Postgraduate Courses for Physicians, Aug. 17, 1957 (Sept. 1, 1957, to Aug. 31, 1958)
Directory and Annual Report of Approved Internships and Residencies, Oct. 5, 1957
Medical Education in the United States and Canada, Nov. 16, 1957

In addition the Council staff has prepared special articles and editorials for The Journal and has assisted in editing the *Federation Bulletin*.

The Council also prepares, and revises as necessary, a number of other publications all of which have wide distribution. In view of the annual release by the National Committee of Regional Accrediting Agencies of the United States, of an authoritative list of "Accredited Institutions of Higher Education," the Council has discontinued its annual revision and publication of the pamphlet "Colleges of Arts and Sciences Approved by Regional Accrediting Agencies." Currently available pamphlets and reprints include:

A Guide Regarding Objectives and Basic Principles of Postgraduate Medical Education Programs
Choice of a Medical School
Functions and Structure of a Modern Medical School
(Replacing the former Essentials of an Acceptable Medical School)
Essentials for Approved Examining Boards in Specialties
Essentials of an Approved Internship
Essentials of Approved Residencies and Fellowships
(In several specialty areas reprints combining the "essentials" with specific requirements in the area concerned are available)
Essentials for the Training of Medical Record Technicians
Essentials of an Accredited School of X-ray Technology
Essentials of an Acceptable School of Physical Therapy
Essentials of an Acceptable School of Occupational Therapy
Essentials of an Acceptable School of Medical Technology
Essentials of an Acceptable School for Medical Record Librarians
(Annual listings of schools in the six areas last mentioned are published by the Council)
A History of the Council on Medical Education and Hospitals
Residency Information Bulletin
Selected Papers from the Annual Congress on Medical Education and Licensure (1957)

Maintaining adequate revision of these and other publications is an important aspect of the work of the Council staff and necessitates constant awareness of changes and close cooperation with associated groups and organizations such as the Association of American Medical Colleges and the various specialty boards in order to avoid obsolescence of data presented. The Council staff is also responsible to The Journal for weekly listings of scheduled examinations and reciprocity meetings of boards of medical licensure, basic science boards, examining boards in the medical specialties etc. When indicated, and as authorized by the Council statements regarding current Council action on matters of interest to the profession are prepared for publication in The Journal.

Development and Needs

With the basic reorganization of the past year under way the activities of the Council on Medical Education and Hospitals are currently moving along with reasonable efficiency. The Council and its staff constantly encounter a succession of interesting and frequently difficult challenges in the conduct of its assignments. It is hoped that during the year ahead it will be possible to work out mutually satisfactory agreements so that residency review committees may be developed in the three specialty areas which do not have them.

It is the opinion of the Council that the activities of its field staff in their contacts with hospital administrators and professional chiefs-of-services responsible for graduate education and training programs is an exceedingly important means of liaison between hospitals, the profession, and the American Medical Association. It is of very real importance that the personnel of the field staff be of very high order and that they represent the A. M. A. in a manner to enhance its dignity and prestige. Currently the Council is pleased to have a field staff component in every way meeting its qualifications. One of the most difficult administrative problems confronted by the Council has been the task of obtaining and retaining such personnel at existing salary levels. The Council believes that it will be necessary to augment its budget next year with the objective of making field staff posts more attractive financially to "top-notch" personnel than has been the case in the past.

Increasing cost of adequately qualified personnel, transportation, hotel accommodations, conduct of committee meetings, Council sessions and the Annual Congress on Medical Education and Licensure, increased printing costs and merit readjustments of personnel salaries indicate that budget estimates for 1958 will increase over those of the current year.

Appreciation

The Council on Medical Education and Hospitals wishes to express its deep and sincere appreciation to Dr. Herman G. Weiskotten and to Dr. Franklin D. Murphy for the outstanding contributions made by them in the interests of the Council and the American Medical Association during their membership on the Council. Dr. Weiskotten's contributions to and impact on medical education have not only been of great current significance but will continue to be felt long into the future as the Council continues to strive for the principles and standards in which he so sincerely believes and towards which he directed its efforts.

The Council also expresses its deep appreciation to Miss Mary McGovern, who on Aug. 1, 1957, retired after 33 years of service with the Council and the American Medical Association.

The Council regrets the withdrawal during the year of five members of its field staff, all of whom rendered fine service during their assignments. These include Dr. F. C. Fitts, Dr. Joseph J. A. McMullin, Dr. Harold J. Chapman, Dr. Homer B. Freese, and Dr. Donald Custis.

The support, encouragement, and cooperation which the Council has received from the officers, Board of Trustees, members of the House of Delegates, other councils and bureaus of the American Medical Association and the fine cooperation and collaboration of the many organizations and agencies with which it has worked during the past year are most sincerely appreciated.

Respectfully submitted,

LELAND S. MCKITTRICK, Chairman.
JAMES M. FAULKNER, Vice Chairman.
WARDE B. ALLAN
W. ANDREW BUNTEN
GUY A. CALDWELL
JOHN W. CLINE
HARLAN ENGLISH
VICTOR JOHNSON
CHARLES T. STONE
W. CLARKE WESCOE
EDWARD L. TURNER, Secretary.

REPORT OF THE COUNCIL ON MEDICAL SERVICE

To the Members of the House of Delegates of the American Medical Association:

The Council on Medical Service and its eight committees held 18 regular meetings and 6 regional conferences during the year. The regional conferences are actually committee meetings held in various sections of the country to which representatives of medical societies in the area are invited. They have proved effective in stimulating interest among physicians and state and local medical organizations; they have also provided the committees with local opinions and attitudes on problems under consideration.

These committees, composed of 56 physicians, one nonphysician, and 6 consultants, provide a varied scope of experience, represent practically all fields of medicine, and have wide geographical representation. It is only through the many hours of time which these committee members willingly devote to conferences and studies that the Council has been able to cover the over-all field of medical service and keep abreast of developments and changes.

Each year the Council itself meets on four occasions to discuss, review, and act on the work being done by each of its committees and to take under consideration matters referred to it by the House of Delegates and the Board of Trustees. One meeting is devoted to conferences with the committee chairmen to plan activities for the coming year and to coordinate the work between committees.

To serve the Council and its committees in the ever-increasing amount of work that must be carried on, it has been necessary to increase the number of staff personnel. During the year two able men have joined the Council staff: Mr. John Guy Miller, with over eight years' experience in medical society work, and Mr. Joe D. Miller, with some five years' experience in hospital administration. This brings the Council staff to a total of 20, including the Acting Secretary, Assistant Secretary, Administrative Assistant, 9 research assistants and field men, and 8 secretarial and clerical personnel.

This year the Board of Trustees approved the Council proposal to create a staff task force of four men to carry on special assignments. Two men have already been employed for this purpose, and, as soon as additional office space is available, the other two will be added.

At this time the Council would like to point out that its staff also serves other committees within the Association. During the year the following ones have been served in full or in part by Council staff members: Commission on Medical Care Plans, Committee on General Practice Prior to Specialization, Committee on Medical Practices, Task Force on Dependent Medical Care, Committee on Relationships Between Medicine and Allied Health Agencies, and Committee on Medical Rating of Physical Impairment. The staff has also assisted the Medical Advisory Committee to the Sears Roebuck in developing several projects.

While it is not possible at this time to review all of the activities of the Council and the committees, some of the activities covering the period from July 1, 1956, to June 30, 1957, are reviewed briefly on the following pages.

However, before going into this review, the Council wishes to acknowledge the long and energetic service of Mr. Thomas A. Hendricks, who was Secretary from 1945 through 1956. When Mr. Hendricks came to the Council, everyone thought medicine's problems were at their height. Yet, throughout the years new and even greater problems arose. As we look back now, we realize the many occasions on which we relied on Mr. Hendricks' experience, judgment, and tact in approaching and carrying out projects in the controversial area of medical service. In his new position as Field Director for the American Medical Association, we know that Mr. Hendricks will continue to serve not only this Council but other councils, bureaus, and departments of the Association.

Committee on Aging

The membership of this Committee has remained the same during the year and includes Dr. H. B. Mulholland, Chairman, Charlottesville, Va.; Edward L. Bortz, Philadelphia; Henry A. Holle, Austin, Texas; Wingate M. Johnson, Winston-Salem, N. C.; Cecil Wittson, Omaha; Frederick C. Swartz, Lansing, Mich.; Theodore G. Klumpp, New York; and J. D. McCarthy, Omaha, ex-officio. Staff members are Mr. George Cooley, Secretary, and Mr. Herbert B. Norton, Research Assistant.

Regional and Committee Meetings

It was pointed out in the 1956 annual report that few medical societies had committees concerned with problems of aging; therefore, the Committee decided to hold its meetings in various sections of the country in the hope of stimulating interest among physicians and the state and local medical organizations. The first of such regional meetings, as a pilot venture, was held in Seattle during the A. M. A. Clinical Session in November of last year. Invitations were sent to the state medical associations and to the local medical societies of 11 contiguous states and also to known members of geriatrics committees in that area.

In the 1956 annual report it was explained that the Committee members, at their first meeting, voted to change the name of the Committee by deleting the word "geriatrics" and substituting the word "aging" because the latter appeared to be more all-inclusive and less restricting than the term "geriatrics." This change appeared to be more than justified at the Seattle meeting; some 25 physicians devoted a great amount of time to a discussion of the aging processes and of an acceptable definition of the word "aging." Other discussion areas were (1) aptitude tests and the possibilities of setting up criteria for measuring physiological and intellectual performance for the purpose of determining a person's ability to perform his job, (2) the teaching of geriatrics and gerontology in the medical schools, (3) preventive geriatrics in private practice, and (4) activities of the federal government in the field of aging.

The area physicians and representatives of the local medical organizations who attended gave articulate evidence of the interest prevailing in the problems of the aging and aged; accordingly, the Committee felt justified in extending its plans to hold additional regional meetings.

The second of the regional meetings was held at Dallas, Texas, in April of this year. In spite of one of the worst floods in the history of Texas, approximately 50 area representatives from nine contiguous states attended. This meeting was held during the annual session of the Texas Medical Association. The Committee met with the regional physician representatives on April 27, and on April 28 they met in joint session with representatives of the Texas Medical Association and the Texas Geriatrics Society. Also in attendance were invited guests from the Texas Gerontological Association, Texas Social Welfare Association, Texas Society for Mental Health, and Council of Social Agencies of Dallas.

The purpose of this joint session was to explore the health needs of the aging in Texas. Selected speakers introduced subjects related to the purpose of the Conference, with each followed by a discussion open to all of the participants. Subjects introduced included (1) Socio-Economic Aspects, (2) Medical Aspects (physical and mental), (3) Hospitals, (4) Homes for the Aged, (5) Rehabilitation, (6) Housing, (7) Employment, and (8) Religion and Recreation.

The next regional meeting is tentatively scheduled during the A. M. A. Clinical Session in December.

Areas Under Study

The Committee is well aware of the fact that problems of aging and of the aged are fast becoming popular subjects for study and activity on the part of both governmental and nongovernmental agencies only indirectly concerned with health. With this increasing interest, it is evident that the medical profession, through state and local medical societies as well as the A. M. A., must be made aware of what is going on to be in a position to participate in the planning of the future course of events. To assist in this the Committee is reviewing the present and proposed activities of various governmental agencies and of the voluntary lay organizations so that the medical profession may be apprised of the thinking and planning that is taking place in this field. Such information should also give direction to the work of this Committee in its efforts to assist medical society committees on aging.

The Committee has resolved to give priority to the following areas:

1. *Retirement (Apititude Tests—Medical Yardsticks).* Available material in this field is to be compiled under the direction of Dr. Wittson and a conference has been scheduled for September, in Washington, D. C., to ascertain what tests have been and are being developed; authoritative persons in the field are being invited. The Committee believes that retirement should not be based on chronological age, and has requested the staff to obtain data on flexible retirement programs for consideration either in September or December.

2. *Periodic Examinations and Evaluations.* Before urging local medical societies to promote the idea of periodic physical examinations, the Committee resolved to prepare a sample examination form as a basis for working out specific recommendations. Dr. Swartz is directing this project.

3. *Liaison with Federal Government and National Agencies.* The delegates should be aware of the intense and widespread interest in "the aged" and "aging" within the federal government. The Committee on Labor and Public Welfare has had its staff compile and release several detailed documents on the subject of the aged and aging, evidently a prelude to possible legislative activity. A Federal Council on Aging has been created representing 12 departments and agencies. These are Department of Agriculture, Civil Service Commission, Department of Commerce, Department of Health, Education, and Welfare, Housing and Home Finance Agency, Department of Interior, Department of Labor, National Science Foundation, Office of Defense Mobilization, Small Business Administration, Department of the Treasury, and Veterans' Administration. This council has broad objectives and a program designed to stimulate activity within the federal government. The Committee has taken steps to establish liaison with the Federal Council on Aging and its component departments and agencies. Consistent with the Committee's policy of maintaining liaison with other organizations concerned with aging, an increasing number of meetings are being attended by both Committee members and staff. Some of the more recent meetings so attended were those of (1) the National Committee on Aging of the National Social Welfare Assembly—this meeting was focused on "retirement"; (2) the 10th Anniversary Conference on Aging of the Division of Gerontology of the University of Michigan which had "Leisure Time" as its theme; (3) the Committee on Aging of the American Public Welfare Association; (4) Regional Conference of the U. S. Public Health Service, U. S. Department of Health, Education, and Welfare; and (5) Midwestern Regional Conference of the Council of State Governments. The Chairman of the Committee, Dr. H. B. Mulholland, is constantly being solicited to appear on programs concerned with aging. In the current year he appeared on the telecast "aging," a national presentation sponsored by Smith, Kline, and French, and has spoken on the subject of aging before many groups, including the Welfare Association of Cleveland; the World Health Conference on Aging in Louisville, Ky.; the Missouri State Medical Association at Kansas City; the State Health Conference in Roanoke, Va.; and the Conference o Health Needs of the Aging in Texas, at Dallas.

4. *Nursing Homes.* Since nursing homes seem to be on of the problem areas, it is important to work out prop standards for such homes. As an initial approach, the stanc ards or laws of each state have been obtained and a co ference arranged with the American Association of Nursi Homes and the American Geriatrics Association.

5. *Geriatric Training in Medical Schools.* It is the co sensus of the Committee that such training should be gi within the framework of established medical education p grams. A study of this, under the direction of Dr. Winga Johnson, is under way and conferences will be held wi representatives from the Council on Medical Education an Hospitals and others with a special interest in this field.

6. *Guides for Medical Society Committees on Aging.* Sinc the Committee has requested medical societies to establis committees on aging, it becomes necessary to provide som direction or guidance for their work. In view of this, a guid for the organization and operation of committees on aging i in process and will be made available to all medical societie

Publications and Inquiries

The series of 15 articles on specific aspects of aging which was discussed in the 1956 annual report is scheduled fo early publication in THE JOURNAL.

Medicine at Work, in the July 27 issue of THE JOURNAL is devoted to an article on aging. This article, written by a member of THE JOURNAL staff, penetrates the many fron which are attacking the problems of aging, and how th are doing it, including the prominent role being played b the A. M. A. Committee on Aging.

The staff is receiving an increasing number of inquiri from physicians, medical societies, and other professio and lay persons. These inquiries range from requests f general information to specific areas; of the latter, nursi homes appear to be a favorite area of interest.

Recommendations

The Committee pointed out in its last annual report that, despite the widespread interest and the great amount of space in medical and other publications devoted to problems of the aging, only a few state medical associations seem to have committees devoting time to this subject. At present, the following states have reported committees on aging. They are either in the form of a specific committee, a subcommittee, or part of a committee on chronic illness.

States with Specific Committees

California
Kentucky
Louisiana
Montana
Maryland
Nevada
North Dakota
Pennsylvania
South Dakota
Texas
Utah
Washington
Wisconsin

States with Subcommittees

Arizona
Colorado
New Jersey
New York
Virginia
Vermont

States with Aging Problems as Part of Committee on Chronic Illness

Georgia
Iowa
Minnesota
North Carolina
Rhode Island

Since it is evident that the federal government, state governments, and many voluntary health and welfare organizations are spending vast amounts of money and time in planning and developing programs to meet the health needs of the aged and to explore the problems of aging, it would seem that all state medical associations should take such action as would assure participation of the medical profession in these activities. Therefore, the Committee recommends that the House of Delegates urge every state medical association to create a committee on aging or to assign this problem to an existing committee.

It is understood that there have been a number of bills introduced into Congress for the purpose of creating a bureau of older persons. The Committee is of the opinion that the present methods of coordinating activities relating to aging within the federal government are adequate and, therefore, the Committee is opposed to the establishment of such a bureau. It is the understanding of this Committee that the Committee on Legislation of the A. M. A. is also opposed to the establishment of a special bureau.

Committee on Relations with Lay Sponsored Voluntary Health Plans

The membership of the Committee on Relations with Lay Sponsored Voluntary Health Plans is composed of Drs. H. Russell Brown, Watertown, S. D., Chairman; Lewis A. Alesen, Los Angeles; F. J. Elias, Duluth, Minn.; J. Stanley Kenney, New York; George S. Klump, Williamsport, Pa.; Raymond M. McKeown, Coos Bay, Ore.; Mr. C. H. Crownhart, Madison, Wis.; and J. D. McCarthy, Omaha, ex officio.

The Committee has held no scheduled meeting during the period of this report due primarily to the fact that the Commission on Medical Care Plans has within its scope of study many aspects which would normally be within the realm of this Committee's interest. Two members of this Committee also serve on the Commission on Medical Care Plans.

Although no formal meetings have been held, the Committee continues to receive information with respect to health benefit programs within the field of its official interest.

It is the understanding of this Committee that the Commission anticipates the filing of its final report by the time of the 1957 Clinical Session. In the event the present timetable is maintained, this should facilitate the resumption of normal activities of this Committee of the Council and permit its reactivation on a full-scale basis.

Committee on Prepayment Medical and Hospital Service

The membership of the Committee on Prepayment Medical and Hospital Service is composed of Drs. Percy E. Hopkins, Chicago, Chairman; John Conway, Clovis, N. Mex.; Charles G. Hayden, Boston; Quentin Kintner, Port Angeles, Wash.; Robert L. Novy, Detroit; O. B. Owens, Alexandria, La.; Carl F. Vohs, St. Louis; Carlton E. Wertz, Buffalo; and J. D. McCarthy, Omaha, ex officio. Mr. Howard O. Brower serves as Committee secretary. Since the last annual report the Committee has had two meetings.

Voluntary Health Insurance

Blue Shield and Other Medical Society Approved, and Blue Cross or Blue Cross Coordinated Plans: The number of persons enrolled in voluntary health insurance plans which are either approved or sponsored by medical associations or coordinated with local hospital benefit plans increased during 1956 to a total of 42,280,458. This represents an increase of 3,195,153 over the figure of 39,085,305 at the end of 1955. During 1956 one new medical-society-approved plan was organized and commenced enrollment during the latter part of the year.

All Types of Insurance Mechanisms: All insurance and similar mechanisms designed to assist in financing health care reported impressive enrollment gains. By the end of 1956, approximately 116 million persons had some kind of hospital expense protection. That represented a 7.7% increase for the calendar year. The extent of surgical expense protection of all types increased 10.2% covering over 101 million persons. The number of persons having regular medical expense insurance increased 16.9% covering approximately 65 million people. Those having major hospital and medical expense coverage at 1956 year end totaled 8,876,000.

The figures in the preceding paragraph as well as those shown in the following tables were devised from the 11th Annual Survey of the Health Insurance Council on "Voluntary Health Insurance in the United States."

Total Enrollment as of Dec. 31, 1956,
by Type of Benefit and Type of Insurer

	No of Persons Protected		
Type of Insurance Organization	Hospital Expense	Surgical Expense	Regular Medical Expense
Insurance companies			
Group	45,211,000	45,906,000	25,177,000
Individual	27,629,000	23,074,000	6,789,000
Unadjusted total	72,840,000	68,980,000	31,966,000
Duplication estimated[1]	—6,581,000	—5,984,000	—2,210,000
Net total	66,259,000	62,996,000	29,756,000
Blue Shield–Blue Cross[2]	53,162,000	42,570,000	33,907,000
Independent plans			
Industrial	3,051,000	3,016,000	2,731,000
Community	631,000	1,011,000	1,014,000
Consumer-sponsored	93,000	99,000	95,000
Private group clinics	479,000	483,000	536,000
College health plans	400,000	300,000	900,000
Total	4,654,000	4,909,000	5,276,000
Less deduction[3]	—8,126,000	—9,150,000	—4,048,000
Net total	115,949,000	101,325,000	64,891,000

[1] Number indicates those who may carry insurance with more than one company.

[2] Includes some plans which may not be medical-society-approved; hence the variance between the HIC figure and the A. M. A. figure as shown previously.

[3] Estimated number of persons who carry both insurance company and Blue Shield-Blue Cross or similar contracts.

As in the past, the Committee on Prepayment Medical and Hospital Service assisted in the efforts of the Survey Committee of the Health Insurance Council along with the Blue Shield and Blue Cross Commissions, insurance companies (through their trade associations) and other contributing organizations. All figures were compiled and collated to eliminate duplication in reporting the numbers insured as explained in the footnotes to the foregoing table.

In releasing the 1956 year-end figures, the Health Insurance Council estimated that by the middle of 1957 hospital expense benefit enrollment had increased to some 118 million persons with surgical and regular medical expense benefit coverages extending to 103 million and 67 million respectively. Moreover, the major hospital and medical expense benefit figure was then estimated to be 10 million. These interim estimates would indicate that over 70% of the entire United States civilian population is currently protected by some form of voluntary health insurance.

Growth in number of persons insured alone does not tell the full story. Medical-society-approved plans and other programs are continuing to (1) revise underwriting practices regarding age limits, size of groups and individual enrollment, (2) make improvements in existing coverage, and (3) experiment in newer types of benefits and coverage.

The amount of health care financed through the medium of insurance and similar mechanisms has reached significant proportions as reflected by the sums reported in claims during 1956. This is evidenced by the following table which indicates the disbursements by category of expense and by type of insuring organization.

Total Payments During 1956, by Type of Benefit and Type of Insurer

Type of Insurer	Hospital	Surgical-Medical	Total
Blue Shield-Blue Cross....	$1,010,000,000	$405,000,000	$1,415,000,000
Insurance companies	900,000,000	465,000,000	1,365,000,000
Independent plans	80,000,000	85,000,000	165,000,000
Total	$1,990,000,000	$955,000,000	$2,945,000,000

Committee Publications

The health insurance brochure entitled "Voluntary Prepayment Medical Benefit Plans" was revised this year, as well as the supplementary pamphlet "Charts and Graphs." Copies of each were mailed to the members of the House of Delegates, Board of Trustees, and officers of the Association, state and county medical society secretaries and executive secretaries, plans listed in the brochure, and hospitals with approved internships and residencies in addition to a large number sent in response to individual requests.

The popular pamphlet "Growth in Voluntary Health Insurance" is in the process of revision. This publication summarizes the total enrollment information relating to all types of programs and also defines the meanings of certain terms used in the health insurance field.

Simplified Claim Forms

The Committee has evidence of continued interest in the subject of simplified claim forms. Although some concern is expressed regarding the extent of medical information requested under some types of coverage, these complaints are far less frequent than was the case prior to the development of the simplified forms. Periodically physicians complain that they are requested to complete several copies of a medical report form. In the majority of cases reviewed by staff, it was learned that such requests did not emanate from the principal office or medical department of the carrier; but were invoked either by the employer or by a local claims administration office.

Should physicians continue to be requested to complete multiple copies of a form for the same treatment, it is suggested that they check the necessity for this duplication of clerical service with the home office of the company or with the medical department. If this does not result in correction of the problem, the Committee will be glad to be of any possible assistance upon request.

Insurance Abuses

From some sources, the Committee continues to receive expressions of concern regarding the extent of suspected abuses of insurance programs. It is believed that in any such situation which involves the medical profession, these matters should be discussed with the medical society in the area involved by the plan or carrier. The Committee has encouraged the timely discussion of these problems after first ascertaining that reasonable grounds exist. It is further recommended that the medical directors of the plans and carriers should assume an important role in any contacts with local medical organizations.

To the many physicians who have a proper understanding of the insurance mechanisms, their intended purpose and those who do not contribute to the alleged abuses, there is an understandable resentment regarding the extent to which the profession is criticized. It is, therefore, encouraging that there are also expressions complimentary to the profession as evidenced by certain remarks in a paper presented recently before a group of administrators of employee benefit programs which was an appraisal of developments under a liberalized program about which doubts had been expressed at its inception:

"The widely expected abuses have not materialized. Of course there have been a few attempts discovered and probably several that have not been discovered. But cases of excessive charges (for example) have been an insignificant part of the total right from the beginning—and the trend is downward as understanding spreads. Our claims cost for the first year was within our preliminary estimate of cost—and we made no conscious allowance for abuse or over-use.

"We have made a preliminary comparison of the average surgical fees charged . . . against the average fees charged under our prior Plan with its $175 surgical schedule. There is no indication in these early data of abuse, either for the country as a whole or by geographical location. As a matter of fact the new surgical fee average in some cases is *lower* than it was under the prior Plan. . . ."

Moreover, that report goes on to state:

"The doctors and hospitals, once they understand it, are enthusiastic about the comprehensive approach. Doctors are particularly appreciative of the plan's flexibility and the absence of fee schedules, and they are generally using their new freedom responsibly."

"Pre-Retirement Financing of Health Insurance for Retired Persons"

Resolution 8, 1956 Clinical Session concerning this topic was introduced by the Pennsylvania delegation. Accompanying that resolution was a report (identified as appendix A) suggesting a method of financing which had been prepared for the Commission on Geriatrics of the Medical Society of the State of Pennsylvania.

It is understood that the appended report as such was not approved by the Medical Society of Pennsylvania, but rather it was referred to the American Medical Association for study along with due consideration of other possible methods of financing. The final "resolved" stipulated that a report of study and recommended methods of financing be presented to the House of Delegates at the 1957 Clinical Session.

This matter was referred promptly to the Council on Medical Service and to its Committee on Prepayment Medical and Hospital Service. A study of that resolution and the appended material as well as reviews of the several methods now utilized in providing health insurance benefits to retirees have emphasized the complexities of the problems.

As indicated in the resolution now under consideration and as mentioned in its Supplementary Report to the House during the 1954 Clinical Session, the Council and Committee on Prepayment Medical and Hospital Service appreciate that financing, although important, is only one of the problems to consider.

Officials of Blue Shield and other medical-society-approved benefit plans, insurance companies, as well as administrators of health and welfare programs and employers have recognized many of the problems and have undertaken wide variety of experimental approaches in search of their olution.

In view of the many facets of the problem and the variety of approaches, the Council and Committee were unable to prepare a complete report together with recommendations by he deadline established for publication of reports in THE OURNAL prior to the Clinical Session. Accordingly, a more omprehensive treatment of the substance of resolution 8 will be contained in a Supplementary Report.

Committee on Federal Medical Services

The membership of this committee has had one change during the year. Dr. Donald C. Conzett, Dubuque, Iowa, was selected to replace Dr. Joseph D. McCarthy of Omaha, who, as Chairman of the Council, will be an ex officio member of all committees. Other members are Drs. Louis M. Orr, Chairman, Orlando, Fla.; J. Lafe Ludwig, Los Angeles; Richard L. Meiling, Columbus, Ohio; Vincent W. Archer, Charlottesville, Va.; Russell B. Roth, Erie, Pa.; Oscar B. Hunter, Washington, D. C.; and J. D. McCarthy, Omaha, ex officio. Staff members are Dr. Thomas A. Alphin, Washington, D. C., and Mr. C. Joseph Stetler, consultants; Mr. George Cooley, Secretary; and Mr. James Fleming, Research Assistant.

The Committee on Federal Medical Services met three times during the period from July, 1956, to July, 1957. Meetings were held at Chicago on Oct. 13-14, 1956, and on Jan. 25, 1957, and at New York on April 5, 1957.

Regional Conferences

The Committee sponsored three regional conferences on veterans' medical care during the year. The first, for states in the central region of the United States, was held at Chicago on Jan. 26, 1957; the second, for the western region, was held in Reno, Nev., on March 16, 1957; and the third, for the eastern region, was held on April 6, 1957, in New York.

The purpose of these conferences was to explain the new policy statement on veterans' medical care adopted by the House of Delegates at Seattle in November, 1956, to determine the medical profession's reaction to this policy change, and to bring the state medical associations up to date on other developments in the field of veterans' medical care since the Committee's last conference, held in Chicago in February, 1955. The role the state association should play was also discussed and suggestions from the states as to future activities for the Committee were requested.

Attendance at the conferences provided representation from most sections of the country. The Chicago (central region) conference was attended by 32 representatives from 18 states, the Reno (western region) conference by 26 representatives from 10 states, and the New York (eastern region) conference by 17 representatives from 11 states, a total of 54 physicians and laymen from 36 states (Pennsylvania, Rhode Island, and Washington were represented at two conferences).

Matters of particular interest to the state representatives were the changes instituted by the new policy statement, the report on recent legislative developments affecting veterans' medical care, and the status of the Hometown Care program. Each of these matters will be discussed under a separate heading in this report.

The Committee feels that the attendance and discussion at these conferences indicate a continuing interest and concern on the part of the medical profession at large and a desire for further action on the problem of VA care. The Committee is also pleased to report that, despite a lapse of two years between conferences with state representatives and a change in membership in many state veterans' affairs committees, those attending were uniformly well informed on the policy, the philosophy underlying it, and recent developments in veterans' care. It is believed that this, also, demonstrates a lively interest in the problem on the part of local societies and component associations.

New Policy Statement

Basic to the Committee's activities in the field of veterans' care is the new policy statement adopted by the House of Delegates at Seattle, November, 1956, after consideration of the 1956 Committee's annual report. Briefly, the new policy, and its points of difference from the policy adopted in June, 1953, are as follows:

1. Veterans requiring care for service-connected disabilities are entitled to full federal care for those disabilities. (This has consistently been the policy of the American medical profession.)

2. Veterans requiring care for non-service-connected disabilities should provide it themselves or, if medically indigent, should be state or local responsibilities. Until the existing law is changed, however, priority for any non-service-connected care provided should go to those suffering from illnesses or disabilities which are economically catastrophic. (The previous policy statement made a temporary exception, on the basis of inadequate facilities, for patients with tuberculosis and neuropsychiatric disorders.)

It has been the consensus of physicians attending the regional conferences that this is an improvement upon the 1953 policy statement in that it delineates more clearly the medical profession's belief that the Veterans' Administration should be responsible for service-connected care only. On the other hand, the recommendation that, until the law is changed, priority should be based on catastrophic financial need is a more practical formulation than the previous "temporary exception." Conference representatives pointed out that, at times, they had found it difficult to justify VA care for tuberculosis and neuropsychiatric cases while denying it for other costly long-term and terminal illnesses.

In June, 1957, the House of Delegates adopted a resolution reiterating the medical profession's opposition to the construction of additional VA facilities for the care of veterans with non-service-connected illnesses. This action was based on resolutions proposed by California and Georgia.

Medical Society Responsibility

The Committee believes, however, that further emphasis should be placed on that portion of the reference committee's report (June, 1957) which states that "under the circumstances it will be to the best interests of the public in general, and veterans in particular, if medical societies, county and state as well as national, develop committees to assist in guaranteeing VA hospital admission to service-connected cases." It also wishes to call attention to the further recommendation, adopted by the House, "While the present law exists, we should help assure that veterans whose illness constitutes economic disaster will not be displaced by those suffering short-term remediable ills which, at the worst, constitute financial inconvenience."

According to the Committee's latest survey, all but six state associations have a committee on veterans' affairs; two associations discontinued such committees during the past year. The Committee on Federal Medical Services Newsletter has reported these recommendations to all members of these state committees. In accord with this policy correspondents requesting assistance in obtaining hospitalization for veterans with service-connected disabilities have been referred to state or local medical societies.

However, no state associations have reported action which would carry out the suggestions of the House. Positive action by medical societies to obtain hospitalization for service-connected cases and, under existing laws, to insure that eligible non-service-connected cases are admitted according to need would be praiseworthy in itself and would serve to negate many of the attacks on the medical profession's VA policy. The Committee, therefore, reiterates the suggestions of the House that state and county societies establish some formal plan to achieve these objectives.

Committee Publications

In March, 1957, the Committee published and distributed a new factbook entitled "A. M. A. Policy on Medical Care of Veterans." This 24-page booklet presents, in question-and-answer format, a discussion of the policy, its basis, the legal and moral aspects of the present program, its competition with civilian health programs, and the cost of VA medical care. The latest statistical data available at time of publication is used. This booklet supersedes both the "Speaker's Kit on VA Medical Care" and "Factbook on VA Medical Care," on which publication has been discontinued.

During the July, 1956, to July, 1957, period the Committee published six issues of the Federal Medical Services Newsletter. The major subject reported was veterans' medical care; however, Newsletters have also included articles on Indian health, the Public Health Service, Medicare, Hill-Burton hospital construction, Foreign Service medical care, the U. S. Medical Library, Public Assistance medical care, and a 3-part survey of the medical care program of the Panama Canal Zone. This is in keeping with the June, 1955, House directive to the Committee to inform the profession concerning the numerous nonmilitary governmental medical programs in existence in addition to that of the Veterans' Administration.

An address given by Dr. Orr, chairman of the Committee, before the Louisiana State Medical Association, entitled "To Socialism and Socialized Medicine By Way of the Veterans Administration," was printed in THE JOURNAL of the A. M. A. and reprinted in pamphlet form under the title "The Trojan Horse." It has been widely distributed through the Department of Public Relations. Reprints have also been made of a letter disagreeing with this address, together with Dr. Orr's reply, as they appeared in THE JOURNAL of the A. M. A., June 1, 1957, pages 572-579; copies have been sent to all members of state veterans' affairs committees.

The Committee has prepared a limited number of sets of 35-mm. film slides which demonstrate, in graphic form, the policy of the medical profession and various statistical data relevant to the veterans' medical problem. These may be used, in conjunction with the new factbook, in presenting talks on the problem to local medical societies and service organizations.

VA and Workmen's Compensation Cases

The VA, for some years, has been hospitalizing veterans with non-service-connected illnesses and injuries covered by workmen's compensation and private health insurance, and billing the insurers for such care. At the Seattle session, the House stated that such veterans should not be considered "unable to pay" for care and should, therefore, be ineligible for VA hospitalization. The Council on Medical Service was instructed to take necessary action to remedy this situation.

As reported to the House on June 1, 1957, representatives of the Council and its Committee on Federal Medical Services met with VA representatives on May 6; A. M. A. Washington Office representatives also conferred with officials of the Bureau of the Budget, the Department of Justice, and the General Accounting Office during May. On May 20, Washington Office representatives called on Congressman Teague, Chairman of the House Committee on Veterans Affairs, and discussed these conversations with him.

The VA opinion was that hospital administrators are obliged to admit any non-service-connected case for which a bed is available if the veteran signs the statement of inability to pay and that they cannot question the veteran's appraisal of his ability to pay at the time of admission. However, both the Bureau of the Budget and the General Accounting Office, it is believed, would favor either legislation or regulatory action prohibiting VA care for non-service-connected cases with workmen's compensation coverage, while the Department of Justice indicated that such admissions might be susceptible to prosecution for fraud.

On May 29, 1957, as reported at the hearings on the Council's report, the VA issued a directive (Interim Issue 10-434) to all hospital administrators informing them that, when they receive information that a veteran is entitled to care, at no cost to himself, for an occupational illness or injury under some form of industrial insurance coverage, they shall so inform the veteran. They shall request him to review his statement of inability to pay and, if medically feasible, to arrange voluntarily for transfer elsewhere. If the veteran refuses, his file is to be referred to the VA Central Office.

The reference committee, in reviewing the Council's report, noted that this directive was in accord with resolutions 12 and 23 of the Seattle session; it agreed with the Council, however, that "the only definitive way to terminate the undesirable practices mentioned in the resolutions and the report would be by amending the law so that there can be no doubt as to its purposes and intent." The reference committee therefore recommended that the Board of Trustees take appropriate action.

Since the June session, two additional items may be reported. On June 26, the Veterans Administration made public its new procedure on Workmen's Compensation covered cases through a press release, which added the information that files sent to the Central Office for review may be referred to the Department of Justice, which may prosecute. Also in June, Council and Committee representatives met with the general manager of the Association of Casualty and Surety Companies in New York to discuss its position on this problem.

The A. M. A. representatives learned that early discussions among representatives of member companies indicated two points of view. One was that, by the acceptance of premium covering costs of hospitalization, there might be a moral obligation on the part of insurance carriers to reimburse Veterans Hospitals for hospitalization services, especially so if Veterans Hospitals cooperated fully with the companies by submitting the necessary forms and reports and by permitting doctors to testify in compensation cases—it being understood that this obligation, if any, would be in no greater amount than would ordinarily be paid if the injured employee were in a private hospital.

On the other hand, there was a point of view to the effect that the rules and regulations of the Veterans Administration which maintain a right to such reimbursement, are not predicated on any valid law of Congress.

During the long period of discussion, items appeared in the press advocating both sides with implications that the carriers, by refusing to pay Veterans Administration Hospitals, were the recipients of charity to the detriment of the taxpayer. Refusal to pay hospital bills that might otherwise be paid to private hospitals in compensation cases also posed the possibility of legislation which might give the carrier less right to medical reports and needed expert testimony than would exist if a friendly agreement were reached.

For the aforementioned, and other reasons, the Association of Casualty and Surety Companies felt that the argument in favor of a moral obligation warranted some arrangement. Therefore, without admitting any legal obligation, the executive committee of the Association of Casualty and Surety Companies entered into an understanding to accept Veterans Administration Hospital bills for payment under certain conditions.

The American Medical Association's position was presented to the claims committee of the ACSC during the week of June 10 by its general manager. The Claims Committee decided that the member companies should, for the present, follow the same course as in previous years and pay VA claims where applicable, but that under no circumstances would they encourage the use of VA hospitals for such care. They are also circularizing the VA directive of May 29 to all members of the association.

It is believed that officials of many of the companies would favor legislation to prevent VA hospitalization for injuries and illnesses covered by workmen's compensation.

Medical Care for Civil Service Employees

As reported to the House in June, 1957, the question of medical care for civil service employees at military installations was first introduced by the Texas delegation at the June, 1956, session. The Council reported in November, 1956, that this program had not resulted in more than a token utilization of drafted physicians. The Texas delegation felt, however, that the main point at issue was the threat of encroachment by federal medical facilities on private practice. The House therefore recommended further investigation by the Council's Committee on Federal Medical Services, including an on-the-spot survey of the "pilot plan" in San Antonio, and a report at the June session.

The Council sent a Task Force, including representatives from the Council, the Committee on Federal Medical Services, the Council on Industrial Health, and the Council on National Defense. One meeting was held in Dallas with representatives from the Texas Medical Association. Two conferences with Bexar County Medical Society representatives were held during the survey of Kelly A. F. B., San Antonio, where the "pilot plan" had been set up.

As a result of the survey and conferences, the Council recommended to the House on June 1,

1. That screening examinations concerned primarily with personal rather than occupational health should be considered within the province of the family physician;

2. That the House consider the question of whether Civil Service government employees should, for occupational health purposes, be considered the same as employees of private industry;

3. That examinations, screening or otherwise, not concerned with or for the purpose of work assignment or related to employment conditions be considered personal health examinations and the proper function of the employee's private physician. When undertaken by industry or government, they are an encroachment on the private practice of medicine.

These recommendations were adopted.

Hometown Medical Care

After World War II, the Veterans Administration found itself with inadequate facilities to provide high quality outpatient care for veterans with service-connected illnesses and injuries. Accordingly, it requested and received the cooperation of private physicians in establishing a "Hometown" medical care program. Under this system, the veteran patient received care from his family physician, when authorized by the VA, and the VA paid the physician's fees, thus providing continuity of care and saving the veteran both the time and inconvenience involved in travel to the nearest VA outpatient clinic.

In some states, the VA contracts with individual physicians, who are the only non-VA physicians in the state providing this outpatient care ("designated physician" system). In other states, the VA negotiates a fee schedule with the state medical association, which provides also a list of physicians willing to participate in the program; the VA then deals directly with these physicians ("direct contract" system).

A third system, in effect in eight states and Hawaii, is known as the "intermediary" type of program. The VA negotiates a fee schedule with the medical association, but administration of the program is in the hands of a third party, or "intermediary," appointed by the medical association, which handles such matters as receiving and recording claims, billing the VA for care, and paying the physicians. In six states, the local Blue Shield agency acts as the intermediary.

In recent years, the VA has been attempting to curtail use of the Hometown care program. Its own outpatient departments and clinics have increased in capacity, and VA officials have testified at congressional hearings that the Hometown Care method is considered merely supplementary, and that the VA prefers to use its own facilities wherever possible. Particular emphasis has been placed on discontinuance of the intermediary type plans, since the VA claims that duplication of administration makes these plans particularly expensive.

The VA planned to discontinue the intermediary plans at the end of 1956, in the middle of a contract year, and so notified several state associations. These states, acting in cooperation with local veterans' groups and congressional representatives, were able to keep the contracts in effect until the end of fiscal year 1957, which ended June 30.

In January, 1957, representatives of the eight states with intermediary plans and Hawaii decided to coordinate their efforts to keep the intermediary contracts in effect. The group's first meeting was held in Chicago on February 10, with representatives of the Council on Medical Service and the Committee on Federal Medical Services present as observers.

In March, representatives of the states with intermediary plans, together with observers from the A. M. A., conferred with Dr. Middleton, VA chief medical director, in Washington. At this meeting, Dr. Middleton stated that the VA neither desires nor intends to eliminate intermediary programs; uniform contracts have been drawn up and signed by the states involved.

The states at present providing Hometown care under intermediary type contracts have suggested that this type of contract provides the most adequate care for the veteran patient and provides the physician with a stronger voice in the professional aspects of that care. They have, therefore, recommended that the Council on Medical Service aid in the extension of this system to other states, which now provide Hometown care under a "direct contract," or "designated physician" arrangement.

At the June, 1957, session of the House of Delegates resolutions were proposed by the California and Michigan delegations regarding Hometown Care programs. The California resolution recommended restudy of the program by those states where it is not at present successful and that available actuarial and other data from successful plans be made available to other states. The reference committee noted that this Committee was already studying this matter and recommended that no action be taken until the Council reported on the study. The Michigan resolution recommended that, since the intermediary method was in use in Medicare, it should be recommended by the Association to all constituent societies. The reference committee disapproved this resolution, since the use of the intermediary method in Medicare was the choice of the individual states rather than of the American Medical Association.

The Council has, accordingly, sent each state a questionnaire designed to determine the extent of interest in the intermediary type plan; if sufficient interest is expressed, the Committee on Federal Medical Services plans to sponsor a conference at which the relative merits of the three arrangements may be fully discussed.

Legislative Developments

Congressman Teague, chairman of the House Committee on Veterans Affairs, has introduced a bill this session (H. R. 58) which would modify admission procedures at VA hospitals, demand a stricter accounting of the assets and liabilities of the veteran with non-service-connected illness or injury, and emphasize to the applicant the seriousness of false statements of inability to pay. The A. M. A.'s approval of this bill, as a step toward curtailment of non-service-connected VA care, was stated at House committee hearings on March 5, 1957, by Dr. Edwin S. Hamilton, speaking for the Board of Trustees, and Dr. Russell B. Roth, representing the Committee on Federal Medical Services. At the end of June, 1957, however, no action had been taken on this bill by Congress.

Other Federal Medical Activities

Since Indian health became a responsibility of the Public Health Service, an appreciably greater interest in providing medical care for these people has been evidenced in Congress. Bills have been introduced during the past session for grants-in-aid to build modern sanitary facilities for the Indians, since lack of adequate sanitary facilities appears to be a basic cause for the high rate of disease and mortality in Indian communities. Legislation has also been asked to provide more hospital facilities for the Indians, either separately or as part of the hospital system serving communities adjacent to Indian reservations. It does not appear likely that any action will be taken on these proposals before 1958.

Government employees in the Panama Canal Zone have negotiated an indemnity-type hospital-surgical insurance plan with a commercial firm in the United States, which pays the employee part of the cost of obtaining care from the government medical program. Since the new plan went into effect only this spring, no detailed information as to its effectiveness is yet available.

The Committee will maintain a continuing check on progress in these and other fields of federal medicine, and will inform the profession of any new developments.

Future Activities

In addition to the specific studies on workmen's compensation cases in VA hospitals and medical care for Civil Service employees at military establishments, on which the Council presented reports at the June, 1957, session, the Committee has, at present, three primary directives from the House of Delegates. The first two are continuing directives from the June, 1956, session:

1. To continue the educational program for the physician concerning the medical profession's policy of federal care for veterans and, when feasible, to expand this educational program to include the general public.
2. To expand the educational program to include all federal nonmilitary medical services, rather than veterans' care alone.

The third directive stems from the resolutions adopted at the November, 1956, session, and requires the Council and Committee to take whatever action is possible to eliminate VA care of non-service-connected disabilities which are covered by private health insurance.

To implement the first two directives, the Committee:

1. Has continued publication of the Federal Medical Services Newsletter, on a monthly or bimonthly schedule, covering a cross-section of federal medical programs, with major emphasis on VA hospitalization.
2. Has published a new factbook, to be utilized by the profession to understand and to explain the A. M. A. policy on veterans' medical care.
3. Will continue surveys of medical care provided through various federal departments and will report to the profession on these studies as well as relevant studies made by other committees of the Council on Medical Service.
4. Is maintaining liaison with state medical associations and intermediary agencies concerned with the Hometown Care program and, if sufficient interest is found to exist, will sponsor a conference or conferences on this subject.
5. Has recommended to state associations the sponsorship of local conferences on VA medical care, either separately or as a part of some other local medical meeting. The Committee stands ready to assist such conferences in any way possible, including having Committee representatives present, if the state association should so request.

In regard to the third directive, the Council and Committee feel that, due to basic differences between workmen's compensation and health insurance coverage, it would be wiser to consider them, in relation to the VA's "inability to pay" requirement, as distinct problems. The Committee also feels that private health insurance coverage in relation to the VA is the more difficult problem, and should be held in abeyance while workmen's compensation coverage is being discussed in Congress and the various government agencies.

Committee on Medical Care for Industrial Workers

The members of this Committee are Drs. W. A. Sawyer, Chairman, Rochester, N. Y.; W. Clark Bailey, Harlan, Ky.; T. J. Danaher, Torrington, Conn.; W. F. Draper, Washington, D. C.; F. J. Holroyd, Princeton, W. Va.; E. P. Jordan, Charlottesville, Va.; M. N. Newquist, New York; and F. W. Slobe, Chicago. Consultants are Drs. D. A. Dukelow and Arthur Springall. Members of the Committee staff are Dr. B. Dixon Holland, Secretary, Council on Industrial Health; Mr. George W. Cooley, Acting Secretary, Council on Medical Service; and Mr. Murray Klutch, Research Assistant.

UMWA Welfare and Retirement Fund

The major portion of the Committee's time during the year revolved around problems in relationships between the medical profession and the United Mine Workers of America Welfare and Retirement Fund. In its last report the Committee had noted with some satisfaction that progress in resolving these problems had been made, particularly in Pennsylvania through the agreement between that state society and the Fund, and that similar progress could be expected elsewhere. It was a shock, therefore, to the Committee to learn that the Pennsylvania Agreement[1] was abruptly terminated on Oct. 23, 1956, by the house of delegates of that state. This action was quickly followed by a number of resolutions by county societies in that state and in several others in favor of free choice of physicians and a fee-for-service method of payment to physicians serving fund beneficiaries. Furthermore, negotiations in other states, aimed at agreements similar to that concluded in Pennsylvania, were discontinued.

The Committee received requests from several state medical societies and the executive medical officer of the fund to intercede in some of these situations and to help resolve the various disputes.

On March 21, 1957, the Committee met in Chicago to hear reports from representatives of the states of Colorado, Illinois, and Pennsylvania with regard to developments in those states and to invite suggestions which might offer some solutions to the existing controversies with the UMWA Fund. On the following day the Committee began the draft of "Suggested Guides to Relationships Between Medical Societies and the United Mine Workers of America Welfare and Retirement Fund." The Committee met again on April 12 to complete its draft, and then on April 14 met with the Council on Medical Service and the Council on Industrial Health to acquaint members of those Councils with the reasons for and purposes of the Guides.

The executive medical officer of the fund, although a member of the Committee, did not participate in drafting the Guides or in editing the version submitted to the Board of Trustees, since the spokesman for one of the states protested his participation to the chairman of the Committee and he believed that his participation might be embarrassing to the Committee.

With minor modifications, the Guides were approved by the Councils and transmitted to the Board of Trustees for its action. The Board referred the Suggested Guides to the

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[1] J. A. M. A. **162**: 155; 164-165 (May 12) 1956.

House of Delegates on June 4 at the Annual Meeting in New York. On June 6 the House of Delegates adopted the Guides with three amendments as suggested by the Reference Committee on Miscellaneous Business. (See THE JOURNAL, July 6, 1957, pp. 1113-1115.)

Both the Reference Committee on Miscellaneous Business and the Committee on Medical Care for Industrial Workers were informed by Dr. Draper that the Guides are unacceptable since they include several provisions unsatisfactory to the medical service of the fund. The Committee believes that the Guides offer an opportunity for the medical profession and the fund to resolve their differences if each is willing to accept the appropriate responsibilities outlined in the Guides. The Committee has accepted its responsibility, as delegated to it by the House of Delegates,[2] in serving as the appeal agency to which either a state medical society liaison committee or the fund may refer unresolved disputes.

Guiding Principles for Evaluating Management and Union Health Centers

In June, 1956, the Colorado State Medical Society introduced resolution 24 before the House of Delegates requesting that these Guides be changed to conform to the Principles of Medical Ethics. The Committee deferred action on this since the Principles of Medical Ethics were in the process of revision. On June 4, 1957, the Committee met in New York and invited representatives of the Colorado State Medical Society to state their specific objections to this document and propose whatever changes they considered advisable. Dr. Kenneth S. Sawyer, representing the state society, suggested two deletions and one addition to the Guides. The Committee accepted the suggestions for deletion of one sentence and part of another sentence. It felt, however, that it could not accept the suggestion to add a paragraph dealing with a financing aspect of health center plans inasmuch as it was not applicable to the Guides. In addition, the Committee voted to change the name of the guides to read "Guides for Evaluation of Management and Union Health Centers." The Committee's recommendations to revise the publication have been forwarded to the two Councils for their approval. The Guides will then be presented to the House of Delegates for action at the 1957 Clinical Session.

Miscellaneous

During the past year, the Committee published the proceedings of the conference it had sponsored at the 16th Annual Congress on Industrial Health on the subject of work absence. The publication "Absence from Work due to Non-occupational Illness and Injury" has received wide acceptance among the medical profession, industry, labor, and educational groups. It has proved to be a needed review of the problem of work absence as well as a document pointing up a number of areas of additional research. In response to one of the recommendations of the conference, the Committee is engaged in the preparation of "A Guide for Measuring Work Absence Due to Illness and Injury," which will attempt to recommend the adoption of uniform definitions and formulas for defining and measuring non-occupational work absence.

In 1954 the Committee published "A Survey of Union Health Centers," which contained descriptions of 17 union health centers. To bring material on this subject up to date, the Committee has proposed the compilation of case studies on approximately 25 additional union health centers which are in operation throughout the country. When the studies are completed, they will be published in booklet form similar to the 1954 pamphlet.

Subject to the approval of the Councils on Medical Service and Industrial Health, the Committee voted to make a study of executive health programs in various industries. This area of study is of particular interest in view of the attention and publicity being given to this aspect of employee examinations and since such programs appear to contain certain problems which are of interest to the two Councils.

Committee on Maternal and Child Care

The members of this Committee are Drs. W. L. Crawford, Chairman, Rockford, Ill.; R. B. Chrisman Jr., Coral Gables, Fla.; Philip S. Barba, Philadelphia; Harold S. Morgan, Lincoln, Neb.; Garland D. Murphy, El Dorado, Ark.; Howard A. Nelson, Greenwood, Miss.; J. L. Reichert, Chicago; and J. D. McCarthy, Omaha, ex officio. Committee consultants are Drs. Donald A. Dukelow, Chicago, and Philip F. Williams, Philadelphia. Staff members are Mr. George W. Cooley, Secretary, and Mr. Donald B. Berg, Research Assistant.

Meetings

As a follow-up of the joint conference on maternal mortality study programs held on June 15, 1956, sponsored by the Committee and reported on in detail in last year's annual report, another joint conference was held on Aug. 5, 1956. In attendance at this conference, in addition to Committee members, were representatives from the organizations participating in the June 15, 1956, joint conference. The product of this conference was a carefully edited "Guide for Maternal Death Studies." This Guide was subsequently submitted to the Council and to the House of Delegates for approval prior to publication and distribution.

The Committee met on Jan. 19-20, 1957, to decide upon the final format and other details of the maternal death study guide booklet before final publication. Another concern of the Committee at this meeting was the development of a Guide, or set of recommendations, for the organization and operation of component medical society maternal and child care committees. A high priority topic concerned the problems of perinatal mortality and morbidity. Decisions were made on the Committee's approach to these problems, and a plan of action was adopted.

Perinatal Mortality and Morbidity Study Program

Before beginning the field work on this program, the Committee deemed it necessary to survey the entire United States to learn where states and communities were conducting perinatal mortality studies or related activities. This survey was in the form of a letter to all state medical societies, state departments of health, and obstetric and gynecologic societies. In addition, inquiries were sent to the national obstetric and gynecologic and pediatric groups to ascertain their present work and/or future plans for work in this field. Response to these inquiries indicated the areas of the country in which the Committee could profitably gather data on current perinatal mortality studies. Field work is now under way in these areas. Preliminary data in seven of the areas, widely scattered over the United States, indicate many different methods being used with many degrees of effectiveness. Little uniformity in definitions exists and in many instances little use is made of the pertinent data obtained.

Articles based upon this data are being prepared for publication in THE JOURNAL and will include detailed information on the various methods and techniques used in these studies of perinatal mortality. Also, regional and national conferences are planned as a means of coordinating the findings and thinking of interested groups. Preliminary reports indicate that one-fourth to one-half of the present perinatal deaths have preventable factors when viewed in the light of present-day medical knowledge. It seems reasonable to assume, therefore, that well-organized studies of these deaths will lead to a reduction of these preventable factors and a clearer definition of now seemingly unpreventable conditions. As basic research is promoted on these latter problems, the unpreventable conditions of today will become preventable tomorrow, and the more complete the nationwide effort, the sooner perinatal mortality will be substantially reduced.

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[2] J. A. M. A. 158: 842-843 (July 9) 1955.

The Committee on Maternal and Child Care plans to gather, coordinate, and disseminate information that will be helpful to state and local medical societies, hospital medical staffs, and health departments in this effort to reduce perinatal mortality and morbidity.

Committee Liaison Activities

The Committee Chairman, Dr. W. L. Crawford, and the Director of the Bureau of Health Education, Dr. W. W. Bauer, represent the American Medical Association as members of the Advisory Committee on Health to the National Congress of Parents and Teachers. Dr. Reichert and Dr. Dukelow are members of the School Health Subcommittee of this Advisory Committee, and at the Jan. 19-20 Committee meeting reported on their activity in this capacity. In addition, they submitted the following resolution at the Jan. 19-20 meeting: "The Maternal and Child Care Committee of the Council on Medical Service, A. M. A., reaffirms its approval of the principle of continuous health supervision of children from birth through their school experience rather than only a program of a single appraisal on school entrance. It also recommends that, where possible, this should be done by the physician and dentist who normally serve that child and family, preferably his personal physician and dentist. The Committee welcomes the support of the National Congress of Parents and Teachers." The Committee endorsed this resolution and it was subsequently approved by the Council.

Dr. W. L. Crawford represented the Committee at a joint meeting on Standards for Maternity Care held in New York on Nov. 2-3, 1956. This was one of several conferences sponsored by the Subcommittee on Standards of the American Committee on Maternal Welfare. Previous conferences had been attended by Dr. Philip Williams, who reported to the Committee on activity and progress. The last in this series of joint conferences on Standards for Maternity Care was held in New York on March 15-16, 1957. The Committee was represented at this meeting by both Dr. Crawford and Dr. Williams. The result of these joint meetings will be a compilation of Hospital Standards for Maternity Care as they relate to physicians, nurses, hospital superintendents, and others concerned. Efforts are being made to coordinate this work with a similar work by the American College of Obstetricians and Gynecologists on Standards for Maternity Care as they relate to physicians specifically.

Dr. Harold Morgan, along with Drs. Ralph Reis and Willis Brown, presented a panel on the subject of maternal mortality studies before the annual meeting of the American Academy of General Practice. This meeting was held in St. Louis in the latter part of March, 1957. Dr. Morgan presented the activities of the Committee on Maternal and Child Care, outlined the Committee's detailed study of maternal mortality study committees in the United States, told how the Committee had gone to various areas of the United States to hold regional conferences at which it learned firsthand the problems in these areas, and described the national joint conferences at which the various obstetric, general practice, and public health groups were represented.

Dr. Reichert participated in a panel entitled "Hemorrhage in Maternal and Infant Care as a Team Problem" at the First Illinois Congress on Maternal Care which was sponsored by the Illinois Committee on Maternal Welfare at Springfield on Feb. 13-14, 1957. Efforts were made at this Congress to insure participation by all professional groups and organizations in Illinois interested in the problems of maternal and infant health and welfare.

Many letters of inquiry on problems related to maternal and child care are received at the Council office. These inquiries are answered directly by the Committee staff when they are directly related to work which the Committee has done or is doing. Others are referred to Committee members and other authoritative sources. They range from requests for statistics, such as the incidence of prematurity, cesarean section rates, and average rates and causes of perinatal deaths, to types and availability of oxygen analysers used in premature incubators and questions about the establishment of homes for unwed mothers-to-be. The material that is being accumulated on these various aspects of maternal and child care has proved of great value as a ready source of information.

Articles and Publications

The last four articles of a seven article series on "A Study of Maternal Mortality Committees" appeared in THE JOURNAL on Nov. 3, 1956, Dec. 8, 1956, Dec. 29, 1956, and Jan. 26, 1957. Subsequently all seven of these articles were reprinted in the third section of the booklet, "A Guide for Maternal Death Studies." The Guide proper constitutes the first section of this booklet, with "Causes of Obstetric Deaths" constituting the second section. This second section is actually a supplement to the "Classification of Maternal Deaths" part of the Guide. It gives, in some detail, a pattern for classification of both direct and indirect obstetric causes of maternal deaths, and coordinates the code-numbering system of Standard Nomenclature of Diseases and Operations and the International Statistical Classification of Diseases, Injuries, and Causes of Death.

Rather than present a limited appendix to the booklet "A Guide for Maternal Death Studies," the Committee decided that a packet of material containing form letters, questionnaires, code sheets, and other forms could best be compiled separately. This packet would then be distributed on request to those needing this supplementary material. It was the consensus of the Committee that by presenting these samples taken from many currently active studies, and in some cases representing some actual examples of suggestions expressed in the Guide, committees now starting such studies (or improving current studies) might be [illegible] in developing those procedures which they believe would function best in their particular situation.

To date 2,100 Guide booklets have been distributed. Most of these have been by request; only state and large county medical societies, state and territorial health officers, deans of medical schools, and those individuals who participated in the several joint conferences received an initial mailing. The packet material, because of the cost involved in its preparation, has been sent out on a loan basis, and to date about 60 copies are outstanding.

It is encouraging for the Committee to know that many state medical societies, which have not up to now had an active maternal mortality study committee, have requested copies of the Guide for their Committee members and have indicated their intent to inaugurate statewide studies. In many instances the medical schools and health departments have also requested additional copies and have been working with medical society committees in getting such studies started. Following is a typical letter of comment and request received after the first mailing: "This is an excellent publication and I believe that the uniformity in terminology and classification will result in better over-all reports from throughout the country. I would like to have ten additional copies, if they are available, to distribute to local health officers and members of the State Medical Society Committee."

In addition to the distribution in the United States, Guide booklets and packet material have been requested by and sent to physicians in the Netherlands, England, Italy, Switzerland, Germany, Puerto Rico, and most of the Canadian provinces.

At Dr. Dukelow's suggestion, Dr. Henry F. Helmholz, Health Chairman, National Congress of Parents and Teachers, submitted a guest editorial that was published in THE JOURNAL on May 4, 1957. This editorial was entitled "The 'Summer Roundup' Grows Up," and describes the development of, and support for, the concept of continuous health supervision of children throughout their entire developmental period. In the same issue another article entitled

"Continuous Health Supervision of Children" amplified on the Committee's resolution mentioned earlier in this report; it also explained the part played by the Bureau of Health Education and the joint Committee of the Bureau and the National Education Association. This article, then, plus Dr. Helmholz' editorial, served to publicize what the Committee thought to be a sound medical program proposed by the Health Advisory Committee and accepted by the National Congress of Parents and Teachers.

Future Activities and Proposed Publications

The first article of the Committee's new series on perinatal mortality and morbidity studies has been submitted to The Journal Editor. Field studies have been made in seven areas to date; five or six other areas are yet to be studied. This will be accomplished during the late summer and fall. The Committee members will have an opportunity to study this material prior to the next meeting planned for November. A Joint Conference is being planned in conjunction with the November meeting; physicians who have been involved in some of these early programs for reducing perinatal deaths and physicians with special interest in the subject will be invited to participate. It is also anticipated that regional meetings on this subject will be sponsored by the Committee early in 1958 to stimulate interest and to permit greater participation of physicians from all areas of the United States. Through such regional meetings the Committee discovers local problems and learns how it can best assist state and local medical society committees give impetus to programs designed to reduce early infant and fetal mortality and morbidity.

The Committee on Maternal and Child Care is working on a Guide or set of recommendations for organization and operation of maternal and child care committees in state and local medical societies. It is anticipated that the final form of this Guide will be decided upon at the next Committee meeting.

Committee on Indigent Care

This Committee has had two membership changes during the year: Dr. John Burton, Oklahoma City, replacing Dr. H. B. Mulholland, Charlottesville, Va., as Chairman, and Dr. Wesley W. Hall, Reno, Nev., replacing Dr. J. L. Lattimore, Topeka, Kan. Other members are Drs. A. J. Bowles, Seattle; E. P. Coleman, Canton, Ill.; I. Jay Brightman, Albany, N. Y.; E. A. Ockuly, Toledo, Ohio; Dean W. Roberts, Chicago; J. D. McCarthy, Omaha, ex officio, and Mr. R. M. Hilliard, Chicago, Consultant. Staff includes Mr. George W. Cooley, Secretary, and Miss Barbara Farley, Research Assistant. The Committee held two meetings during the year—one in Chicago in November, and one in Washington, D. C., in March.

Public Assistance

During the past year the Social Security Act was amended to provide a new method for federal dollar matching of medical care payments for recipients of public assistance. This program, which went into effect July 1, 1957, covers more than 5 million persons on the public assistance rolls, of which 2,500,000 are on Old Age Assistance (OAA); 2,300,000 are on Aid to Dependent Children (ADC); 600,000 are on Aid to the Blind (AB); and 270,000 are under the Permanent and Total Disability program (APTD). Not all states will avail themselves of these funds this year but, if past experience with matching funds is an indication of future utilization, most states will be revising their public assistance laws to take advantage of this new source of money for indigent medical care.

Since payment for physicians' services is included in this program, the constituent medical associations should be fully informed on the operations and potentials of the program. Furthermore, the Federal regulations permit a wide latitude of state, and even local, determination of policy and administration. In view of this, and of the continued increase in public assistance beneficiaries, it seems reasonable to assume that each state association should undertake to act as spokesman for the local profession in the development of any program that includes physicians' services. To be thoroughly informed on this subject, the Committee met on two occasions with representatives of the Bureau of Public Assistance of the Department of Health, Education, and Welfare; in addition, the staff conferred with Bureau representatives on several other occasions.

Following these conferences and a review of literature on the subject, a series of 52 questions and answers was prepared, incorporating background information on public assistance programs and describing the present system of care and methods of financing care under the new amendments to the Federal Social Security Act. These questions and answers were published in The Journal, June 15, 1957, pages 770-776, under the title "Medical Care for the Indigent in 1957." Reprints of this article were distributed to state medical associations and, on request, to many others concerned with this problem. In addition, a survey guide was devised to assist constitutent and component societies evaluate their present indigent medical care programs.

Another project of the Committee was preparation of "Guides for Medical Societies in Developing Plans for Tax-Supported Health Services for the Needy." These were a modification of a set of similar Guides prepared a year previous by the Committee in cooperation with the American Dental Association, American Hospital Association, American Public Health Association, and the American Public Welfare Association. The revised Guides were submitted to, and approved by, the House of Delegates in December, 1956, and were published in The Journal, Jan. 19, 1957, pages 190-191. Having been approved by the House, the Guides represent A. M. A. policy and, as such, have been forwarded to all medical societies.

Studies and Surveys

The Committee has completed a nationwide survey on "Organized Home Care Programs." These are programs designed for selected patients who do not need all the services of a hospital, but who would otherwise have to be hospitalized; they provide such patients with a range of individualized medical, nursing, social, and rehabilitative services in their own homes, coordinated through one central administrative agency.

A complete report was published in The Journal. Although this type of program is not new, the first having been started in the Boston Dispensary of the New England Medical Center in 1796, a rather widespread interest has resulted from studies in the fields of aging and chronic illness. Questions about home care programs will continue to be raised, and it is hoped that this report will be of assistance to medical societies in evaluating the need for and place of such projects in their own areas.

A second project still in progress is the study of Central Services for the Chronically Ill. Such informational services, at least in the larger cities, can certainly be of value to physician and patient alike. How, when, and under what auspices they are organized and operated in the few areas where they do exist will be answered by this study.

Recommendation

At this time the Committee would like to make one recommendation; that is, that the House of Delegates urge every state medical association and county medical society to participate actively in the planning and operation of medical care programs for the indigent.

This recommendation is made because while some medical societies have actively participated in such programs the majority have left most of the planning to welfare agencies. It is the concensus of this Committee that better services result when the medical society takes an active interest in, and participates in the planning and operation of indigent medical care programs. Furthermore, despite the present prosperity, the welfare rolls are not decreasing and, with any lessening in economic activity, are likely to increase substantially. There are many types of programs now in operation from which medical societies might select methods and techniques suitable to the area's needs. However, there are policy questions which each medical society, particularly the state medical association, should answer. Examples of such policy questions are: Are hospitals to get first priority on dollars available? Are physicians to be paid for services rendered? Are they to be paid for home and office care only or should this also include in-hospital care? Are indigents to be permitted free choice of physician? If so, would such free choice refer only to home and office care or would it also include in-hospital care? If free choice is permitted, what effect will it have on teaching programs? Are public clinics to be used? If so, are physicians to serve without charge, or are they to be paid? If they are to be paid, will it be on fee-for-service, an hourly basis, or by contract? If fee-for-service is used in the program, who is to prepare and revise the fee schedule? What group is to administer the medical program? The medical society? The health department? The welfare department?

These questions, the Committee believes, are basic. It behooves medicine, then, to work with welfare agencies to see to it that proper and adequate programs are developed. To accomplish this, medicine must take an active interest in and participate in planning and operating such programs.

Committee on Medical and Related Facilities

The membership of this Committee remained the same throughout the year, although at the Annual Session in June, 1957, two Committee members (Drs. McKeown and Nafe) were elected to the Board of Trustees and will be replaced. The members are Drs. Willard A. Wright, Chairman, Williston, N. D.; Raymond M. McKeown, Coos Bay, Ore.; Robert L. Novy, Detroit; Walter E. Vest, Huntington, W. Va.; E. Dwight Barnett, New York; David Henry Poer, tlanta, Ga.; Cleon A. Nafe, Indianapolis; and J. D. Mc-arthy, Omaha, ex officio. Staff includes Mr. George Cooley, Secretary; Mrs. Alice McKillop, Research Assistant; Mr. Joe Miller and Mr. John Guy Miller, field surveyors.

The Committee has met on two occasions—Oct. 27-28, 1956, in Washington, D. C., to discuss the Hill-Burton program with representatives of the Public Health Service, and Feb. 9-10, 1957, in Chicago with representatives of the American Hospital Association and the Association of American Medical Colleges.

Medical School Study

The study of problems relating to private practice arrangements of medical school faculty members was submitted to and approved by the House of Delegates in June, 1956. Copies of the report and the recommendations approved by the House have since been sent to all medical societies concerned and to all medical schools. Since the release of this study and report, most of the public airing of controversies between medical societies and medical schools has disappeared. This does not mean that all differences have been settled but at least they are being considered within the profession and not in the newspapers.

The Committee has had no complaints or adverse comments from medical societies on the policy adopted by the House. However, it has received objections to several points from the Association of American Medical Colleges. In view of this, the Committee chairman met with the Executive Committee of the A. A. M. C., and the full Committee met with representatives of this group. Their primary objection seems to concern the definitions of clinical faculty members. The A. A. M. C. has been asked to submit its suggestions in writing, and when these are forthcoming, the Committee will review them and consider the possibility of further conferences to iron out differences. Until objections to these definitions are clearly delineated and justifiable changes are proposed, the Committee does not recommend any revision in present policy.

However, we should again like to recommend that the House urge the development of official liaison between medical societies and medical schools and that this mechanism be used whenever problems, questions, or policies arise that may concern the private practice of medicine or in which the medical profession may be of assistance to the schools. Liaison will not eliminate all problems, but it will avoid many and is certainly the only rational basis for solving those that do arise.

Group Practice Study

The report on this study has been completed and was published in the July 20, 1957, issue of The Journal, pages 1338-1348. In its final form the study included data on visits to 103 group practice clinics ranging in size from 4 to 70 physicians, and located in more than 23 states. The report discusses the data under such headings as (1) Why Do Groups Start; (2) Mechanics of Starting a Group; (3) What Were Some of the Early Problems after Organizing; (4) Why Doctors Join Groups; (5) Why Doctors Leave Groups; (6) Distribution of Group Income to Members; and (7) Member Benefits and Requirements. Reprints of The Journal article have been made and are available on request to physicians interested in group practice.

The Committee is continuing its efforts to develop a listing of all private practice clinics in the United States so as to be informed of the growth of this type of medical practice. As of July, 1957, over 800 were included in this roster. However, no information is to be published until definitions of such terms as medical clinic, medical group, and group practice can be established. To accomplish this a conference has been scheduled with representatives of the American Association of Medical Clinics and the National Association of Clinic Managers. If this is completed by December, the results will be presented to the House of Delegates at the 1957 Clinical Session.

Physicians Placement Service

This year has seen an increase in the number of physicians seeking a location, communities seeking a physician, medical groups seeking additional specialists, and physicians seeking an associate—5,330 inquiries this past year compared to 3,713 the previous year. Much of this increase has been due to requests from communities under 2,000 seeking assistance in securing a physician. In addition to the above number, over 300 physicians have requested other types of information such as the Plan of Assistance of the Sears-Roebuck Foundation.

Almost 4,000 copies of the questionnaires from physicians seeking a location for practice have been mailed by the Physicians Placement Service. In the past, copies of the questionnaire completed by the physician have been referred to the placement services of the medical societies in the states in which the physician has indicated an interest. This year, however, copies of these sheets have also been sent to those seeking the services of a physician, when the physician gives his permission. A good response has been received from those seeking a physician, with the indication that the physicians are being contacted. However, frequently those to whom physicians' names are referred state that the physicians have been contacted but have not replied. The Committee believes that individual physicians seeking a location have a responsibility to acknowledge inquiries of this sort despite the fact that they may not be interested in the opening. Even a brief reply would serve to establish better public relations.

Community Requests: All communities seeking general practitioners through the A. M. A. Placement Service are referred to the state medical associations. This is done with the thought that the state is in a better geographical position to evaluate the actual need of the community. Requests are still received from people who are irritated with the present physician over a trivial matter, or from the druggist who wants more business, or the real estate agent who has property for rent. From this latter group, there has been a large increase in requests by letter, by telephone, and particularly by office visit. All but six states supply a copy of their state listings to the Physicians Placement Service for the use by visiting physicians and for the purpose of providing the A. M. A. with a general picture of placement assistance requested across the country.

During the past year 580 specialty opportunities have been listed in the fields of anesthesiology, dermatology, ENT, EENT, internal medicine, neurosurgery, neuropsychiatry, obstetrics and gynecology, ophthalmology, orthopedics, pathology, pediatrics, proctology, psychiatry, radiology, surgery, and urology. This is an increase over the 403 positions listed during the preceding year. The greatest number of requests continues to be for specialists in the EENT field. Pediatricians, psychiatrists, ophthalmologists, and otolaryngologists are in great demand. The greatest diversity of positions for specialists is listed by Illinois, Michigan, Minnesota, Ohio, Texas, Virginia, and Wisconsin.

For each of the past five years the number of general practitioners seeking an associate has increased. There were 372 such positions listed during 1956-1957, with Minnesota, Wisconsin, and Michigan offering the largest number of such arrangements.

As of July, 1957, 2,565 openings were listed for general practitioners, including openings for an associate. A breakdown of this figure indicates a decrease in the number of towns above 2,000 population seeking one or more general practitioners. At present only 589 of these larger centers are listed. The increase in requests from smaller areas may be due in part to publicity in recent issues of popular magazines on the small communities that have sought and secured the services of a physician.

Positions open for physicians in occupational medicine have increased, but the total number of salaried positions listed in the Placement Service files has decreased during the year from 256 to 193. This category includes college health, foreign, industrial, institutions, Public Health, locum tenens, and U. S. Government.

Physician Requests: Since July, 1956, over 1,500 physicians have been listed with the Placement Service; of these, 634 have located. Of the remaining 866 names on file, 558 are specialists, 296 are general practitioners, and 12 are interested only in a salaried position. Over 85% of the closures came as a result of letters or of follow-up forms completed by physicians showing that they have located.

The Placement Service does not profess to cover or include all physicians seeking a location or all opportunities available for physicians, but it is reasonable to believe that our figures provide a good cross-section of both. Some of the discrepancies in supply and demand apparent from the figures available are:

For every internal medicine position listed, 3 internists are available;

For every surgery position listed, 5 surgeons are available.

Since 50% of the surgery listings are for a combination of general practice and surgery, the latter ratio comes nearer being 10 to 1 where practice is limited to surgery.

On the other side of the scales we find:

2 positions listed for each radiologist seeking a location;

2 positions listed for each general practitioner seeking an association;

3 positions listed for each psychiatrist seeking a location;

3 positions listed for each ophthalmologist seeking a location;

3 positions listed for each industrial physician seeking a location;

4 positions listed for each ENT specialist seeking a location; and

10 positions listed for each EENT specialist seeking a location.

The states that seem to be most popular with physicians are California, Connecticut, Florida, Illinois, New York, Ohio, Oregon, Texas, and Washington. Surprisingly, this list is almost the same as the list included in the first report relative to placement activities made in 1949 by the Council on Medical Service.

In 1949 there were 50 office visits by physicians seeking location information; in 1957, this number was over 300 or more than one per working day.

State Placement Activities: The number of states expanding their placement services to give more extensive assistance to both communities and physicians has continued to increase. The Committee wishes to take this opportunity to acknowledge and thank the committees and staff of the states for their splendid cooperation both in reporting new activities and following through on requests from physicians. Physicians seeking a location for practice are impressed with and often commend those states which offer frequently revised, informative listings. To keep the various state programs posted on what others are doing the Committee plans to submit to The Journal a number of brief news notes on new projects or modes of operation by individual states.

Articles, Exhibits, Meetings: "Portraits in Harmony," an article published first in The Journal, depicts the ups and downs and final success of a number of communities seeking a physician. This material came from the Council's booklet "Community Efforts Provide Medical Facilities" and more recent Placement Service files. This was reproduced in *Today's Health* under the title "How Little Towns Get Good Doctors." A condensation of the original article appeared in *Reader's Digest* under the title "Bringing Doctors to Main Street."

The coverage of this one article in the several publications was at least one major factor in almost doubling the number of requests from small communities seeking assistance in securing a physician.

The new Physicians Placement Service exhibit made its first appearance at the Student A. M. A. meeting held in Philadelphia during May, 1957. Although many of those attending the S. A. M. A. meeting believe that a location for practice is rather far in the future, there will be some who will remember, when the time comes, that such a service is available. Senior medical students, interns, and their wives will profit most from the time spent with the exhibit in observing sources of location information and factors to consider. "Sources of Location Information" appearing on one panel of the exhibit include the county medical societies, the state medical associations, the American Medical Association, the national specialty organizations, medical schools, professional business management, classified advertisements, and commercial agencies. The panel listing "Location Factors to Consider" calls attention to family life facilities, office facilities, hospital facilities, nursing service, practice expansion possibility, nearest medical center, supplemental income, and intangible factors, such as, population trend and climate. More questionnaires from those seeking location information were returned from this meeting than from any other S. A. M. A. meeting.

Progress on Hill-Burton Study

During the past year the Committee has been engaged in a study of a federal program which has been in operation with relatively little challenge for a decade. Never before has the American Medical Association (or other organizations to our knowledge) undertaken a complete study to evaluate this program, its objectives, its methods, and its accomplishments. The scope of such a study is obviously broad.

For the benefit of the members of the House, following is a summary of the general methods employed in the study, the extent of survey work, and some observations encountered by the field staff. While a final report will not be made until the 1958 Annual Session, it would seem that a progress report is in order at this time.

The first task was to study the material available through congressional committee hearings, magazine and journal articles, and various government publications to learn of the background for this legislation and the historical aspects of the program. An understanding of the original objectives of the Hill-Burton program has been ascertained by studying the original act and the debate in the congressional committees at the time this legislation was considered. This information has been summarized in question-and-answer form for possible publication in THE JOURNAL.

During the early part of the study the Committee was concerned largely with this background material and some of the technical aspects of the operation of the program. Out of this has come a clearer understanding of the answer to two fundamental questions: (1) What is Hill-Burton? and (2) What aspects of Hill-Burton are of special concern to the medical profession?

Immediately before and following the review of this material, the staff made field visits to several states. In each they talked with the state Hill-Burton director to learn his philosophy, methods of operation, the accomplishments of the program, and plans for the future. It soon became apparent that some of the most significant information might come from the "grass roots." Therefore, visits have been made to Hill-Burton facilities to talk with the administrators and, of greatest importance, to visit with the doctors of the community who practice in the facility. Their opinions regarding the need for the facility, the way in which it was built, the success, utilization, and general accomplishments (in both a positive and negative sense) have been illuminating.

The administration and operation of all state programs have been reviewed through their Annual Survey Reports which are required by law. In addition, field visits have been made to 12 states (Arkansas, Connecticut, Georgia, Illinois, Iowa, Kentucky, Michigan, Mississippi, Montana, New Jersey, Oregon, and Washington). In this field work an effort has been made to interview practicing physicians, hospital administrators, and state Hill-Burton program directors as well as to visit facilities. Since the American Medical Association is particularly interested in those aspects of the program most directly concerned with medical practice, special attention has been given to diagnostic and treatment centers and rehabilitation projects.

At this point in the study a number of observations can be made.

Most material of the period seems to indicate that the real objective of those who drafted the original legislation was to help provide general hospital facilities in low income rural areas. Senator Hill cited areas in the South where hospital care was unavailable and gave examples of the effects of this lack of facilities. The Hill-Burton act, therefore, represented the federal government's first real attempt to survey the hospital facilities that existed in this nation and to help toward the construction of new ones in areas of greatest need.

Some important provisions in the law have enabled the program to function smoothly.

The law provided for a nationwide inventory of existing facilities and for an annual revision to keep it up to date.

Few federal controls are specified in the original Hill-Burton act. The most important are:

a. Those relating to the type of sponsors eligible;
b. Those relating to the nature of the facility;
c. Those relating to the requirement that the facility must provide a "community service";
d. Those relating to the facility's continued operation in the way and for the purposes for which it was intended; and
e. Those relating to standards for the type of structure so that adequately designed hospitals will result.

Although each project must be approved by both the state agency and the U. S. Public Health Service, the federal government only sets the total allocation to the state. The state divides this money among the projects as it chooses within broad federal limits. The establishment of priorities for projects is a function of the state agency within these limits.

The federal allotment formula was devised to give the most federal money to areas of greatest unmet need and to areas with the smallest financial resources. This formula gives special advantage to the states with low average per capita incomes by squaring this factor in the allotment formula. On the other hand, it works to the disadvantage of sparsely settled states with high per capita income. Questions have been raised as to the continued necessity of this emphasis.

The federal law provides that each state is to have an advisory council; however, its authority and the character of its membership are established by state law. In some states, this council has little importance and is circumvented for important decisions of policy.

Although this study is not complete, some areas deserve special attention.

1. The Wolverton Amendments (1954) to the Hill-Burton act were intended to "earmark" funds to stimulate construction in certain categories deemed to be in need of emphasis. There is, however, some question as to the advisability of such categorical aid, since all projects would have been eligible for aid under the original act (part C) with the exception of nursing homes and diagnostic or treatment centers when not a part of a general hospital.

Actually some states have reported difficulty in finding applicants for aid under these new categories and some projects may have been altered in order to make them eligible for aid.

2. In a number of states the medical society is relatively uninformed on the workings of Hill-Burton, and a high percentage of physicians interviewed were unaware of the extent to which grants are available for projects other than general hospital construction. In most states no formal consideration of the program and its implication has been undertaken by the medical society.

3. The term "diagnostic or treatment center" has been subject to widely differing definitions by the various states. These have included:

a. Pathology laboratories;
b. Radiology laboratories;
c. Mental health centers;
d. General hospital outpatient departments; and
e. Interpretations similar to former Health, Education, and Welfare Secretary Hobby's statement in congressional hearings that a "diagnostic and treatment center is a facility in which a number of medical specialties and technicians operate as a team."

The bulk of "diagnostic or treatment center" projects undertaken has consisted of facilities to expand outpatient departments in general hospitals. A high percentage of such facilities has involved expansion or addition of highly specialized services such as deep radiation therapy.

4. Widespread exception to the federal ratio of one "diagnostic or treatment center" per each 10,000 population has been noted. This has been based in part, apparently, on the federal regulation that "The count of existing diagnostic or treatment centers shall exclude: (*a*) Offices of private physicians and dentists whether for individual or group practice."

The propriety of "diagnostic or treatment centers" as objects of Hill-Burton aid under any circumstances has been questioned in some quarters.

5. There is confusion in definition and purpose of rehabilitation. This has evoked questions on Hill-Burton aid to rehabilitation facilities similar to those observed on diagnostic or treatment centers.

6. A frequently expressed opinion on chronic facilities, including nursing homes, is that the primary problem is one of support after construction because of financial incapacity common to chronically ill patients.

There is some question as to the federal criteria re-
ing the number of facilities needed. For example, 4.5
per thousand population is the criteria used for general
itals in all states throughout the nation. The effective
and for hospitalization is the basic factor determining
number of hospital beds which are needed. Federal
ria ignore the fact that this effective *demand* varies
state to state.
uthorities in several states believe that changes in med-
practice have rendered federal criteria unrealistic. For
aple, recent developments in tuberculosis therapy have
lted in shorter periods of hospitalization with intensive
atient follow-up. Thus, even in the face of a statistical
et need in this category, some states report that tuber-
sis hospitals are converting their beds to other types.
. Facilities listed as acceptable in one state may or may
be so listed in another state. The relation of acceptable
s to beds needed determines the percentage of need met
, thus, is the most important factor in determination of
rity. This lack of comparable criteria and thus a lack of
nparable estimates of unmet need, may give a false im-
ssion as to:

a. The total unmet needs of the nation; and

b. The relative unmet needs of the various states.

9. A matter which should receive further attention is the
deral Hospital Council and its role in the Hill-Burton
ogram. Individuals interviewed during the study, includ-
g state agency directors, have made little reference to this
oup. Its importance is somewhat obscure. Perhaps the
ouncil should be examined with the possible view of steps
assure that its membership include, at all times, physicians
. the active practice of medicine.

10. One of the original objectives was to provide a co-
dinated hospital system in each state. There is little evi-
ence that this has been realized.

11. The consensus of persons interviewed has been that
uch needed construction of general hospitals in rural areas
as been accomplished through the Hill-Burton program.
lost persons approve this phase of the program despite the
bservation in some areas that there has been a low occu-
ancy rate in both Hill-Burton and non-Hill-Burton rural
ospitals.

These are but a few of the areas on which the Committee
opes to report in June. If any state medical association has
ncountered special problems that might be of general in-
rest or has information of value to the Committee, it
hould report them to the Council office.

Other Activities

Chronic Illness Newsletter: During the year the Council
as continued bimonthly publication of the Chronic Illness
ewsletter. From all indications the Newsletter has been
ell received and continues to serve a useful function. The
ailing list of approximately 12,000 individuals and organ-
ations represents a cross section of the medical and allied
ealth fields. Every effort has been made to maintain the
gh quality of material developed by the Commission on
hronic Illness. This has been made possible through the
forts of a special Editorial Committee, composed of Dr.
. B. Mulholland, Dr. Dean W. Roberts, and Mrs. Lucille
nith, former Commission members, and Dr. Edward L.
ortz, a member of the Council's Committee on Aging.

In addition to the Newsletter, the Council staff has been
mpiling information and data on the general subject of
ronic illness itself. Actually the term "chronic illness" is
broad and covers such a wide variety of illnesses and dis-
ases that information relative to it cuts across most of the
her Council committees. In view of this the material col-
cted will be sort of a clearing house for reference purposes
r all of the committees as well as other organizations and
gencies interested in the subject.

FCDA Study: The Council on Medical Service is co-
perating with the Council on National Defense in a study
establish criteria for the provision of medical care of the
surviving population in the event of an enemy attack on this nation. The study is being financed by a grant of $150,000 from the Federal Civil Defense Administration. Council representatives on this study are Drs. Burton and Novy.

National Health Survey: In 1956 Congress passed Public Law 652, entitled the National Health Survey Act. The law was intended generally to provide a means for carrying on surveys and special studies of the population of the United States to determine the extent of illness and disability and related information. Administration is provided for through the surgeon general of the Public Health Service. The Council has been following closely developments under this National Health Survey program, and Dr. Mulholland has been asked to serve as a member of the Advisory Committee to the project, with Mr. Cooley acting in a staff capacity.

Medical Society Executives Roster: Almost 10 years ago the Council started publishing a roster of medical society executives and publications. The first issue, completed in June, 1948, included the names of 110 executives and a list of 56 county medical bulletins being received by the Council. During the intervening years this roster has been published biannually to keep pace with the expansion of medical societies and the changes in personnel.

For some time it has been evident that this task was more within the province of the Secretary's Office than the Council. As a result the Council published its final roster in 1956. This edition contained the names of over 300 executives and listed 258 medical journals and bulletins. The Roster is now published by the Secretary's Office and is continuing to serve a real and useful purpose.

Bibliography on Health Economics and Related Material: For a period of many years the Brookings Institution carried on basic research projects in the health field. During this period the Institution compiled an extensive bibliography. About two years ago the Institution decided to withdraw from research in the health field and at that time offered to make available to the council the original draft of this bibliography with the hope that it could be published. During the year the Council has published this bibliography in 11 sections, covering costs, financing, and economics, personnel, services, and related material. Copies have been sent to the state medical associations and large county medical societies and are available to physicians, libraries, and others interested in such information.

Respectfully submitted,

J. D. McCarthy, Chairman.
H. B. Mulholland, Vice Chairman.
John F. Burton
R. B. Chrisman Jr.
T. J. Danaher
J. Lafe Ludwig
Robert L. Novy
Carlton E. Wertz
Hoyt B. Woolley
Dwight H. Murray
Mr. George W. Cooley, Acting Secretary.

REPORT OF THE COUNCIL ON CONSTITUTION AND BYLAWS

To the Members of the House of Delegates of the American Medical Association:

Meetings

During the period covered by this report (July 1, 1956, through June 30, 1957) the Council on Constitution and Bylaws has met three times: in Seattle on Nov. 25, 1956; in Chicago on Feb. 23, 1957; and in New York on June 1, 1957. Since the last annual report, a supplementary report was presented to the House of Delegates at the Seattle session in November, 1956, and at the New York Session in June of 1957.

Amendments to Bylaws

No changes in the Constitution or the Bylaws were made during the New York session in June, 1957. Two changes were made in the Bylaws at the Seattle Session in November, 1956, however:

(1) *Chapter I, Section 2,* was amended so as to include among those eligible for Service Membership commissioned medical officers in the reserve components on extended active duty with the various defense forces and the Public Health Service, and so as to eliminate the permanent medical officers of the Indian Service, since that service is now a part of the Public Health Service.

(2) *Chapter II, Section 2,* was amended so as to protect a member from losing his membership in the A. M. A. when he moves to a new location. He may now preserve that membership for two years by applying for membership in the constituent society in the jurisdiction to which he has moved his practice.

Although only two amendments were made in the Association's organic law during the past year, the Council had occasion to consider many more proposed changes. The Council would be the first to admit that experience and changing circumstances require periodic adjustments in an organization's constitution and bylaws. It believes, however, that there are great values in stability of purpose and procedure, both for private groups and for society and it therefore urges that proposed changes in the Association's Constitution or Bylaws meet a strict test of necessity before being adopted. The Council, in order to accomplish the purpose for which it was created, will apply that test.

Principles of Medical Ethics

It is with pleasure that the Council calls to the attention of the profession the adoption of the revised Principles of Medical Ethics. Since 1952, the Council on Constitution and Bylaws, the Judicial Council, the House of Delegates, and many hardworking and sincere individuals have realized the inadequacies of the former Principles. After a vain attempt to revise and improve them, it was finally realized that a new and simplified format was not only desirable but necessary. More study and discussion followed and the first short form of the Principles was submitted to the House of Delegates in November, 1956. This met with tentative approval except for two sections. In February the Council met in Chicago and spent almost its entire time working on these two sections. The results were again submitted to the House of Delegates in New York last June. Following are the newly adopted Principles of Medical Ethics of the American Medical Association:

Preamble.—These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public.

Section 1.—The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

Section 2.—Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments.

Section 3.—A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

Section 4.—The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose without hesitation, illegal or unethical conduct of fellow members of the profession.

Section 5.—A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

Section 6.—A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care.

Section 7.—In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient.

Section 8.—A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby.

Section 9.—A physician may not reveal the confidences entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community.

Section 10.—The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community.

The Council sincerely believes that the profession has every right to be proud of these new Principles. It believes that they adequately incorporate in one brief document the high ethical standards which have been characteristic of physicians since time immemorial. Finally, it believes that the Judicial Council, through its annotations to prior decisions on various ethical problems, will be able to amass a foundation of opinion that can continue to guide it and the entire medical profession. The Council on Constitution and Bylaws wishes to take this opportunity to thank all those who had anything to do with this worthwhile culmination to an extremely difficult task.

Respectfully submitted,

B. E. Pickett, M.D., Chairman.
S. H. Osborne, M.D.
Floyd S. Winslow, M.D.
Warren W. Furey, M.D.
Walter E. Vest, M.D.

REPORT OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

To the Members of the House of Delegates of the American Medical Association:

The New York convention of the Woman's Auxiliary in June brought to a close the 35th year. This summary covers the year 1956-1957, under the presidency of Mrs. Robert Flanders, whose theme was "Health Is Our Greatest Heritage." Reports from state auxiliaries throughout the country showed that we have carried on a wide variety of activities related to our main areas of interest: mental health; safety, particularly on farm, home, and highway; health programs and science fairs. The two specific projects on which the American Medical Association requested our aid have been major concerns: *Today's Health,* which we have promoted since 1931, and the American Medical Education Foundation, to which we have contributed since 1951. Individually, members serve their communities, aiding all types of health and rehabilitation projects and hospitals.

Cooperation with the American Medical Association is noteworthy. A significant change has been made leading to increased cooperation in legislation. Mrs. Charles L. Goodhand, national chairman of legislation, was invited to attend a meeting of the A. M. A. Committee on Legislation last spring. During this meeting two very important motions were made by the A. M. A. Committee with reference to national auxiliary activities. These motions were subsequently approved by the Board of Trustees of the American Medical Association. They were:

1. The legislation chairman of the Woman's Auxiliary shall be invited to all important meetings of the A. M. A. Legislation Committee.

2. The A. M. A. Committee on Legislation shall go on record as requesting comparable organization in the Woman's Auxiliary to better facilitate the cooperation of both organizations on legislative matters and the Auxiliary shall be given all the names of A. M. A. Legislative Committee members and key men.

Mrs. Flanders commented on this in her annual report: "It is another acknowledgment of the Auxiliary's recognition by the American Medical Association. It is indeed gratifying to the members of the Woman's Auxiliary to realize that the A. M. A. is asking for our assistance more and more. We do enjoy working with them and hope they will continue to seek our cooperation."

We have had gratifying and cordial cooperation with many representatives of the American Medical Association. Dr. Dwight H. Murray, Dr. David B. Allman, Dr. George F. Lull and members of the Board of Trustees have advised our leaders informally as occasions have arisen. Dr. Ernest B. Howard is our liaison to the Advisory Council. It is to him that we turn for trusted guidance. He has given many hours to consult with us. At each of our national meetings, convention and conference, he gives the "A. M. A. Roundup," an up-to-the-minute summary of events about which it is important for us to have accurate information. It is always concise, helpful, and enthusiastically received by our members. We are happy to have you know of our gratitude for his wise counsel and friendly assistance.

During the past year we have gotten help from many A. M. A. sources. National and state leaders receive the Washington Letter and the Secretary's Letter. Staff members and chairmen of many departments and councils have appeared on our conference panels and convention round tables. We have developed Auxiliary activities in consultation with the Committee on Civil Defense of the Council on National Defense, Bureau of Health Education, Law Department, Committee on the Medical Aspects of Automobile Injuries and Deaths, Council on Medical Service, Council on Mental Health, Department of Public Relations, Committee on Rehabilitation, and the Council on Rural Health. We are fortunate to have headquarters in the A. M. A. Building at 535 N. Dearborn St., Chicago, and we express our thanks for the offices provided for us. Miss Margaret N. Wolfe, Executive Secretary, heads a staff of five members who efficiently and tactfully carry on the many details of our work, including the quarterly publication of our official bulletin.

In 1956-1957 we were responsible for 79,035 subscriptions to *Today's Health*, and we gave $113,437.80 to the American Medical Education Foundation. This includes contributions from all of our constituent auxiliaries and ten percent of our national budget. Since 1951 gifts to A. M. E. F. totaled $394,830.64. Our chairmen have had most satisfying cooperation with the staff members handling these two projects.

Throughout the country our auxiliaries recruit young people for training in the professions allied to medicine, providing scholarships and loans which this past year totaled $122,459.40.

By vote of the 1957 convention we made token gifts of $100 each to the World Medical Association, the American Heritage Foundation, the Committee on Careers in Nursing, and the National Committee for Careers in Medical Technology.

Special mention should be made of our relationship with the Student American Medical Association. For the second year we have given $100 to its Student Loan Fund. At the S. A. M. A. Convention in Philadelphia last May we sponsored a brunch for the wives of the delegates. Upon request, we appointed a representative, Mrs. George H. Garrison, a member of our Board of Directors, to work with a committee to organize the Woman's Auxiliary to the Student American Medical Association. We anticipate having the chairman of the organizing committee as a guest at our fall conference.

It is customary for the national president to attend state auxiliary conventions or conferences and to represent us at meetings of numerous nonmedical organizations with which we have associations. Mrs. Flanders took part in 34 state meetings, while other officers or chairmen visited the remaining 14. She appeared before the A. M. A. House of Delegates at both the June and interim sessions and was a guest at the Public Relations Institute and conferences on rural health, mental health, Poliomyelitis, and A. M. E. F. She attended the convention of the Woman's Auxiliary to the Southern Medical Association. In addition, she represented the Auxiliary at the National Safety Congress, Citizens' Committee for the Hoover Report, American Cancer Society and a meeting planned for national women's organizations by the Department of Health, Education, and Welfare. Other representatives attended the National Women's Advisory Council of the Federal Civil Defense Administration, Traffic Safety Seminars and a meeting of the National Association of Manufacturers. Mrs. Flanders also wrote articles for the "Home Safety Review" of the National Safety Council and for the "Get out the Vote Campaign" of the American Heritage Foundation.

Our total membership is approximately 75,500. National active members are the wives of active or service members of the American Medical Association (or widows of men who were in good standing at the time of their deaths). National associate members are those members of constituent auxiliaries who do not qualify for active membership.

A workshop was held at the close of the New York convention in preparation for the year ahead. We asked each state and county auxiliary to (1) review its objectives and the relation of its activities to them; (2) build an even closer working relationship with the medical societies through orientation programs on the objectives of the American Medical Association and of the Auxiliary and through the partnership approach to public service projects; and (3) explore and try out some of the newer methods for understanding how groups work and solve problems together. To this end, we will have professional guidance on group discussion methods at the annual fall conference held in Chicago with the state presidents, presidents-elect, and national committee chairmen. Mrs. E. Arthur Underwood, the President-elect of the national Auxiliary, is chairman.

We appreciate the continued supervision and assistance which the state medical societies are giving to our state leaders. Increasingly we are trying to steer our activities into fields of service which are of timely importance to the medical profession and to our communities, thus carrying out our objectives and the theme for 1957-1958, "Health Is a Joint Endeavor."

(Mrs. Paul C.) Catharine Craig, President.

REPORT OF THE AMERICAN MEDICAL EDUCATION FOUNDATION

To the Members of the House of Delegates of the American Medical Association:

At the midpoint of its seventh year, the American Medical Education Foundation submits the following report covering the period from July 1, 1956, to July 1, 1957. It is with pleasure that we announce continued progress in expansion of the Foundation's efforts to aid this country's 83 medical schools and to report that during the past six years, both individually and through their medical societies, physicians have given more than six million dollars to the A. M. E. F. for medical education.

At the conclusion of the Foundation's sixth year on Dec. 31, 1956, the total income from 1951 was $5,757,039. Of this sum $1,072,727 represented contributions during the calendar year of 1956, an increase of 40% over the income of 1955.

Grants Distributed to the Schools

In February, 1957, the American Medical Education Foundation made its first direct distribution to the medical schools as the result of a decision of its Board of Directors no longer to channel its income through the National Fund for Medical Education. The total of grants made among the 83 schools according to the formula decided by the Foundation was $1,072,365.71. Of this amount, $551,425 of undesignated money was divided equally among the schools and $520,940.71 designated by donors for specific schools was distributed as an addition to the basic gift.

The invaluable assistance of these grants was particularly emphasized in the contents of the letters of appreciation received from the deans and the university presidents of every school.

Though this was the first year that our grants were made separately from those of the National Fund for Medical Education, they were distributed at the same time so that the joint efforts of the two organizations would be appreciated by the public and the leadership of the medical profession would further stimulate industry's support of the National Fund.

The announcement of this new grants program was made as a supplement to the report last year to the House of Delegates at the clinical session in Seattle, and the wisdom of the Board of Directors in making this decision has become increasingly apparent. A better relationship with the alumni funds has been established and a closer identification by the physician contributors to the A. M. E. F. with the schools is evident. This is so because it has been easier to present the program when it is not necessary to explain the complicated transfer and grants program of an organization whose identity was often confused with A. M. E. F.

State Activities and Gifts

The successful conclusion of the 1956 campaign can be attributed to nationwide support from organized medicine. The specific examples of this support which are detailed below do not include many other states for whose efforts and sponsorship the Foundation is grateful.

In 1956, California, Arizona, Nevada, and Idaho, joined with Illinois and Utah to give the A. M. E. F. a gift from every member of their state society paid through states dues. In addition, New Jersey gave the Foundation a $25,000 gift financed by a dues increase. It is interesting to notice that the voluntary contributions from those states, above and beyond the dues gifts, were substantial despite the fact that the dues increase had been substituted for previously active voluntary campaigns. For example, in Illinois and California more than $20,000 from each state was received in individual contributions in addition to the dues gifts.

Among the states which conducted voluntary campaigns in 1956, Minnesota, Delaware, Kansas, and Connecticut deserve particular attention for well-organized voluntary appeals developing contributions that approached the per capita gifts of the dues increase states.

During the period covered by this report many counties should be recognized for 100% participation by their members, but the list is too long to include in this report. Of particular interest, however, are the gifts received from Chattanooga-Hamilton County Society of Tennessee, whose generous treasury grant of $5,000 was matched by $5,000 from a local foundation in the name of the businessmen of Chattanooga. Two other interesting gifts were made: the Pueblo County Medical Society donated all of its income from its poliomyelitis inoculation program and by action of the Rice County Medical Society of Minnesota its treasury gave $10 with each contribution from one of its members.

Other states who have given treasury grants to the Foundation were recognized at the June meeting of the House of Delegates and awarded Scrolls of Merit in deep appreciation for their generosity, but this report would not be complete if it did not make reference to the Colorado State Medical Society, which not only tripled its contributions over the previous year but also pioneered a cooperative program with the state's medical school, coordinating its efforts with the alumni organization of that school and established a relationship which may be adaptable elsewhere.

During the first six months of 1957, many of the states decided that a fall campaign would be better suited to their organizations. Despite this decision the income of the Foundation for the half-year was approximately 15% ahead of 1956, and the outlook for 1957 should be progressively better than any previous year.

State Chairmen's Meeting

Much of the credit for these successful programs can go to the state chairmen who have accepted this difficult assignment. They have spent much time and effort educating their colleagues to the importance and necessity of the medical profession's leadership in support of medical education.

On Jan. 27, 1957, these state chairmen met at the Drake Hotel in Chicago to exchange ideas on the best methods to be used locally to promote their program.

Many of the state chairmen expressed appreciation for the introduction of a new way of conducting such programs by dividing the group up into small sections where individual participation could be more complete.

Changes in Organization and Personnel

At the November, 1956, meeting of the Board of Directors of the A. M. E. F. Dr. F. J. L. Blasingame of Wharton, Texas, replaced Dr. Walter L. Martin of Virginia, who retired. Dr. Blasingame, an ex officio member of the Foundation's Board as a member of the A. M. A. Trustees' Executive Committee, was elected a voting member at that time. At its meeting in June, 1957, the Foundation's Board of Directors also accepted with regret the resignation of Dr. Herman Weiskotten and elected Dr. Leland S. McKittrick of Brookline, Mass., in his stead. Dr. McKittrick is the new chairman of the A. M. A. Council on Medical Education and Hospitals.

A. M. E. F. Alumni Relations

It has been mentioned before that the relations between the A. M. E. F. and the various medical schools' alumni appeal programs were strengthened by the decision of the Foundation to distribute separate grants. During the past year, the Foundation has made every effort to cooperate with the schools in their attempts to build alumni programs. To do this, the Foundation has joined the American Alumni Council and increased its correspondence with the alumni secretaries of the various schools.

To cement the relationships between A. M. E. F. and the alumni programs, the Foundation conducted a meeting in Chicago on March 23, 1957, to which it invited, through the American Alumni Council, representatives of 24 schools to consider some of the problems which had arisen because of joint or dual solicitation between A. M. E. F. and alumni fund campaigns.

Representing the A. M. E. F. were the Foundation's staff and Dr. Edward L. Turner, Secretary-Treasurer. Dr. Ward Darley, executive director of the American Association of Medical Colleges, represented his organization. Two medical school deans were also present. Representing the schools were their development officers and alumni secretaries.

Present also as a representative of the University of Colorado was Dr. Frank McGlone, who, in addition, is an active chairman for A. M. E. F. in his state society.

The first conclusion of the group was that better communication was necessary among those who were working for the same goal, the active participation of the medical profession in the support of medical schools.

Many points were raised as how best to coordinate the efforts of various interests. Dr. Turner pointed out that it was recognized that each school was primarily concerned with its own problems. He suggested an objective study be made of ways to solve some of the problems.

After discussion, it was decided by the meeting that the Board of Directors of the Foundation be requested to activate a committee composed of representatives from the alumni secretaries, the medical school deans, the physicians of the state chairman's group, and the Foundation. This committee would be invited to study these problems and encourage better communication between the groups. At the June meeting of the Board of Directors this recommendation was accepted.

One of the direct results of this meeting was a cooperative effort between A. M. E. F. and Georgetown University. A. M. E. F. Pledge envelopes were furnished to the Georgetown alumni office where "Georgetown" was printed in the space left for the contributor to earmark his donation. An A. M. E. F. folder and the pledge envelope were then mailed by the school along with a letter from the dean to all Georgetown medical alumni.

The Woman's Auxiliary and A. M. E. F. in 1956-1957

The enthusiasm and activity of the Woman's Auxiliary to the American Medical Association in its efforts to help the American Medical Education Foundation were more productive than ever during the year 1956-1957. A 25% increase over the previous year was the result of these efforts which raised $113,461 for the nation's medical schools.

It should be emphasized that no appeal to physician husbands was included in their woman's program. The remarkable total was raised by benefits and small gifts from the large majority of the 70,000 members. The Foundation is grateful for this substantial contribution and particularly appreciative for the attention and understanding of our program which this wholehearted participation has spread through the medical community.

To assist the Auxiliary in its program, the Foundation's staff furnished the women with portfolios, two newly designed folders, and several other pieces. Lessons learned from last year's general mailing were applied to an inexpensive one-part request sent to every Auxiliary member with gratifying results.

The highly successful sympathy card that the women used in their program was redesigned to be more effective. This card is sent when a contribution is made to the Foundation as a memorial instead of flowers. A new and rewarding project was the "Evening at Home" which several auxiliaries sponsored, selling tickets to doctors and their families to save them from the ordeals of attending a benefit.

The Foundation is grateful to the many county and state auxiliaries who made treasury gifts. In particular, it would like to thank the Woman's Auxiliary to the American Medical Association who again this year graciously contributed 10% of its budget to A. M. E. F.

Promotional Activity

Our staff, this past year, has visited nearly all the states to aid the committees in accelerating their programs. Some, of course, were visited a number of times. New folders, brochures, and a revised tax letter were mailed to the profession or forwarded to the states for distribution. A new major display exhibit was just shown at the June, 1957, meeting in New York. The exhibit is available to state society and metropolitan committees.

A program is now in progress to organize successful campaigns in some of the larger metropolitan areas. It will be of great aid to our state committees to have a metropolitan chairman responsible for the A. M. E. F. campaign in his city.

This year the A. M. E. F., one of the co-sponsors of Medical Education Week, concentrated its participation in this effort to assisting the Woman's Auxiliary by preparing materials and furnishing speakers for the Women's program publicizing the work of the medical schools to other women's organizations in this country.

In Appreciation

The Directors of the American Medical Education Foundation extend their grateful appreciation to those persons and organizations, both lay and professional, who have consistently and devotedly supported the Foundation from its beginnings. Significant recognition should be directed to the state chairmen and their committee workers, the officers and houses of delegates of the various state organizations, Mrs. Helen Fargher, National A. M. E. F. Auxiliary Chairman, Mrs. Robert Flanders, National Auxiliary President, and the women who have unselfishly given their time and efforts on behalf of the Foundation and the medical schools.

It is the desire of the Board of Directors to particularly thank the House of Delegates, Trustees and Officers of the American Medical Association, not only for their generous gifts but also for their constructive influence and understanding of the program of the Foundation. It is with pride and warm thanks that the Board acknowledges the thoughtful generosity of the A. M. A. for the special allocation of operating funds which permits the Foundation to give the medical schools every dollar raised for their benefit.

The Board would also like to take this opportunity to thank the Editor and the staff of The Journal for advertising space and for their assistance in the preparation and publication of editorial material relating to the progress of the Foundation, and to thank the many state journals which have printed editorials and advertisements urging support for the Foundation; the publishers of *Medical Economics* and *Modern Medicine* also deserve gratitude for the advertising space which they contributed to A. M. E. F. during the past year.

The Board of Directors feels honored by, and deeply grateful to, the physicians of this country whose generosity and understanding have made possible the increasing success of the Foundation. Every effort shall be made to administer this trust in the spirit and for the purposes that they have so unselfishly defined.

Respectfully submitted,
Louis H. Bauer, M.D., President.
George F. Lull, M.D., Vice President.
Edward L. Turner, M.D., Secretary-Treasurer.
Donald G. Anderson, M.D.
F. J. L. Blasingame, M.D.
John W. Cline, M.D.
Gunnar Gundersen, M.D.
Edwin S. Hamilton, M.D.
Victor Johnson, M.D.
Leland S. McKittrick, M.D.
J. J. Moore, M.D.
David B. Allman, M.D.
L. W. Larson, M. D.
Julian P. Price, M.D. ex officio
Austin Smith, M.D.
John W. Hedback, Executive Secretary.

REPORT OF THE COMMITTEE ON MEDICAL PRACTICES

To the Members of the House of Delegates of the American Medical Association:

The Committee on Medical Practices has held two meetings during the year July 1, 1956, through June 30, 1957, and at each meeting conferred with individuals who might contribute to and assist in the Committee's work.

In its last annual report in December, 1956, the Committee reviewed at some length the five directives given to it by the House of Delegates (The Journal, Jan. 19, 1957, pages 194-197). One of the directives referred to the establishment of departments of general practice in medical schools and the development of better opportunities for medical students to receive experience in general practice. After considering this in the light of efforts already under way within the Association and by other groups the Committee recommended (adopted by the House) that a special study be made by the Council on Medical Education and Hospitals, the Association of American Medical Colleges, the American Academy of General Practice, and representatives of the various specialties. A study committee composed of representatives of the above has been created and a review of its work is included in this year's annual report of the Council on Medical Education and Hospitals.

Two other directives had to do with arbitrary discrimination by hospitals against general practitioners. The Committee again made specific recommendations (The Journal, Jan. 19, 1957, pages 194-197) in reference to these directives, both of which were adopted by the House.

The remaining directives referred to the development of a relative value schedule for diagnostic, medical, and surgical services and a program of public education designed to bring about a better understanding of all fields of medical practice. It is with these two directives that the Committee has been concerned during the past year. There seem to be several approaches to carrying out these directives, each of which is reviewed briefly at this time.

In the first place, the problem might be approached from the point of view that any change in the relationship between medical services and surgical services must originate within the profession itself. Physicians establish their own fees and, to the extent that these reflect in the public mind the relative values between medical services and surgical services, the spread in these values as accepted by the public will continue so long as the spread in charges made by physicians for such services continues. Therefore, if anything is to be accomplished in promoting the importance of diagnostic and medical services the first step may need to be taken by the physicians themselves.

In the second place, since the ultimate objective is to obtain public acceptance, the problem may also be approached through public education. The lay person sees the results of surgery and therefore appreciates its value and is willing to pay for it. The results of diagnostic and medical treatment, on the other hand, frequently are not so evident and are less appreciated by the public than the dramatic effects of surgery. The task here, then, is to secure public acceptance of the fact that it requires just as much education, knowledge, and skill to diagnose and treat illness as it does to perform surgery and that, while the results may not be so dramatic, they are equally important to the well-being of patients. Since "public education" is a function of two existing units within the Association (Public Relations Department and the Bureau of Health Education), the directors of these divisions have been requested to assist the Committee in this area. Both divisions have done this and their directors are reporting at each meeting of the Committee.

The Bureau of Health Education has offered to further this objective through its regular services, the contacts of its staff with school teachers and lay audiences, and through editorials and articles in *Today's Health*. In addition, the Bureau has a certain amount of television opportunities in the educational field as distinguished from the public relations field. All of these channels are available to the Committee.

The Public Relations Department is also making its channels of communications available to the Committee, emphasizing medical practice as contrasted to surgery. A practical example is the film "Even for One," which the Public Relations Department showed at the request of the Committee before the House of Delegates in June.

A third approach to this problem is through a relative value scale for the whole of the practice of medicine. The idea is to produce a relative value scale in points, not in dollars, which would indicate for both doctors and the public the proper relation between fees for various medical and surgical services. This approach has been used in California, with some degree of success. However, even here there is little change in the relation between medical practice and surgery since a relative value scale for each has been developed, with no effort being made to relate the two.

The Committee stated in its last annual report that any relative value schedule for the whole of the practice of medicine should be deferred until it had an opportunity to confer with representatives of medical organizations, which have developed schedule scales. Following up on this, it has become apparent that, to the best of our knowledge, aside from California, there are no relative value schedules developed by medical societies. Such schedules as were found are generally termed "usual fees," "average fees," or "minimum fees" and are actually schedules of fees rather than relative value schedules. Taking another approach, then, the Committee set about to learn what, if any, are the relative values within schedules established by or approved by medical societies. In other words, what are the relationships between fees in schedules developed by physicians themselves?

The Committee has collected over 135 fee schedules prepared by and used by county medical societies. Among these are "average schedules," "usual schedules," "minimum schedules," and "public assistance schedules." In addition, examples of "medicare schedules" and "prepaid plan schedules" are also being included in this project. None are indemnity schedules, all are "full" pay for the purpose for which they were prepared. In addition, the Committee has available to it the actual charges made by physicians in some 10,000 cases now under study by the American Society of Insurance Actuaries. This material is being tabulated and, with the assistance of this group of actuaries, will be analyzed to determine what, if any, relationships exist between the medical and surgical fees within the schedules and within the actual charges made by physicians. These data will then be correlated with the Relative Value Scale developed in California. Whether or not this will bring the Committee any closer to "a relative value scale for the whole of the practice of medicine" is certainly open to question. However, we will know more about the situation as it now exists, a situation which may well continue with more and more schedules being developed.

Finally, there is a fourth approach and that is from the standpoint of costs or cost accounting. There have been a few instances of where actual cost studies have been used to determine fair and equitable fees. This, of course, would involve cost of education as an investment, cost of building and equipment, operations, and perhaps even certain so-called fringe benefits. The Committee has not explored this approach but believes it is worth mentioning.

The directives given to this Committee, which have been discussed here briefly, are obviously long term. We shall continue to work with the various groups within and without the Association to further the purpose of the directives and will report our progress to the House of Delegates.

Respectfully submitted,

Warde B. Allan, Chairman.
W. Andrew Bunten.
Lester Bibler.
R. B. Robins.
Elmer G. Shelley.
George W. Cooley, Secretary.

THE TECHNICAL EXPOSITION . . . . . PHILADELPHIA CLINICAL MEETING

The Technical Exhibits at any A. M. A. Meeting provide a quick review of the new developments in medicine.

The visiting physician has an excellent opportunity to examine new ideas and new methods—as well as to have a brush-up review of the old stand-bys and new applications that have been developed.

From Tuesday to Friday, Dec. 3 to 6, in Philadelphia, 150 technical exhibitors will put the newest developments in the field of medicine on parade for you. With convenience and at your ease you may pick and choose what is useful in your practice. Skilled representatives of each company will answer your most technical questions and help in every way to make your practice of medicine more effective and efficient.

The Technical Exhibits will be open from 8:30 a. m. to 5:30 p. m. each day of the meeting, closing Friday at 12:00 noon. For your convenience all features of the Philadelphia meeting are under the same roof. You may conveniently visit the Scientific Exhibits, Technical Exhibits, Clinical Discussions, Color Television, and Medical Motion Pictures within a few hundred feet from one another.

We look forward to seeing you in Philadelphia and to your making full use of the values the Technical Exhibits offer you.

THOMAS R. GARDINER
Business Manager and Director of Technical Exhibits

TECHNICAL EXHIBITORS — 11th CLINICAL MEETING

	Booth Numbers
Abbott Laboratories, North Chicago, Ill.	C-11, C-12, C-13, C-14
American Cyanamid Co. (Fine Chemicals Div.), New York	D-34, D-36
American Electronic Laboratories, Inc., Philadelphia	G-20
American Medical Association Publications, Chicago	F-6, F-8
American Medical Education Foundation, Chicago	G-10
American Sterilizer Co., Erie, Pa.	E-31
Ames Co., Inc., Elkhart, Ind.	D-20, D-22
Arlington Medical Co., Arlington Heights, Ill.	G-16
Audio-Digest Foundation, Glendale, Calif.	G-3
Ayerst Laboratories, New York	C-33, C-35
Baxter Laboratories, Inc., Morton Grove, Ill.	E-20, B-27
Best Foods, Inc., The, New York	F-15
Bib Corp., The, Lakeland, Fla.	H-8, H-9
Blair Laboratories, Inc., Short Hills, N. J.	E-34
Blakiston Division, The—McGraw-Hill Book Co., Inc., New York	E-15
Borcherdt Co., Chicago	E-8
Breck, John H., Inc., Springfield, Mass.	E-18
Brewer & Company, Inc., Worcester, Mass.	E-29
Bristol-Myers Products Div., New York	C-16
Burdick Corp., The, Milton, Wis.	C-29
Burns Cuboid Co., Santa Ana, Calif.	D-28
Burroughs Wellcome & Co. (U. S. A.) Inc., Tuckahoe, N. Y.	B-2
Cameron Surgical Specialty Co., Chicago	E-28
Chicago Reference Book Co., Chicago	G-7
Chilean Iodine Educational Bureau, Inc., New York	G-9
Christian Medical Society, Chicago	G-14
Church & Dwight Co., Inc., New York	E-6
Ciba Pharmaceutical Products, Inc., Summit, N. J.	B-1, B-3, B-5, B-7, B-8, B-10
Coca-Cola Co., The, Atlanta, Ga.	G-2
Coreco Research Corp., New York	G-18
Dalzo, Inc., Hackensack, N. J.	E-30
Davis, F. A., Co., Philadelphia	E-7
Devereux Schools, Devon, Pa.	C-34
Dictaphone Corp., New York	F-18
Doho Chemical Corp., New York	E-27
Eaton Laboratories, Norwich, N. Y.	A-11, A-12
Edwards Shoes, Inc., Philadelphia	F-35
Eisele & Co., Nashville, Tenn.	G-31
Electro-Therapeutic Instrument Co., Broadview, Ill.	F-29
Encyclopaedia Britannica, Inc., Chicago	D-32
Encyclopedia Americana, Grand Rapids, Mich.	G-5
Ethicon, Inc., Somerville, N. J.	C-28
Fischer, H. G., & Co., Franklin Park, Ill.	D-30
Fischer, R. A., & Co., Glendale, Calif.	E-33
Fisher-Stevens, Inc., Clifton, N. J.	G-8
Flint, Eaton & Co., Decatur, Ill.	G-17
Fougera, E., & Co., Inc., Hicksville, N. Y.	F-23
Geigy Pharmaceuticals, Div. of Geigy Chemical Corp., Yonkers, N. Y.	E-1
General Foods Corp., White Plains, N. Y.	E-24, E-26, F-25
Gerber Products Co., Fremont, Mich.	F-9
Gray Pharmaceutical Co., Inc., Newton, Mass.	F-36
Grune & Stratton, Inc., New York	C-19
Guardian Chemical Corp., Long Island City, N. Y.	G-30
Health Insurance Council, New York	F-28
Heinz, H. J., Co., Pittsburgh, Pa.	C-27
Hoeber, Paul B., Inc., New York	E-5
Hoffmann-LaRoche, Inc., Nutley, N. J.	B-23, B-25
Holland-Rantos Co., Inc., New York	G-4
Hollister-Stier Laboratories, Philadelphia	F-20
Homemakers' Products Corp., New York	B-32, B-34, B-36
Johnson & Johnson, New Brunswick, N. J.	D-17, D-19, D-21
Jesse Jones Box Corp., Philadelphia	F-27
Kimberly-Clark Corp., Neenah, Wis.	F-30
Knoll Pharmaceutical Co., Orange, N. J.	D-27
Lea & Febiger, Philadelphia	B-21
Lederle Laboratories Div., American Cyanamid Co., Pearl River, N. Y.	D-12, D-14, D-16, D-18
Leeming, Thos., & Co., Inc., New York	C-15
Lilly, Eli, & Co., Indianapolis	D-24, D-26, E-23, E-25
Lippincott, J. B., Co., Philadelphia	D-23, D-25
Little, Brown, & Co., Boston	F-16
Lloyd Brothers, Inc., Cincinnati	D-5
Loma Linda Food Co., Arlington, Calif.	E-17
Lov-e' Brassiere Co., Hollywood, Calif.	F-3
Luzier's, Inc., Kansas City, Mo.	F-2, F-4
Macmillan Co., The, New York	A-1
Massachusetts Indemnity and Life Insurance Co., Boston	E-19

	Booth Numbers
Mattern X-Ray Div. Land-Air, Inc., Chicago	B-28, B-30
McNeil Laboratories, Inc., Philadelphia	E-21, E-22
Mead Johnson & Co., Evansville, Ind.	C-7, C-9
Medco Products Co., Inc., Tulsa, Okla.	G-24
Medical Dental Photo Co., Levittown, N. Y.	F-13
Medical Film Guild, New York	C-3
Medical Protective Co., The, Fort Wayne, Ind.	E-32
Mennen, Co., The, Morristown, N. J.	F-34
Merck & Co., Inc., Rahway, N. J.	D-2, D-4
Merck, Sharp & Dohme, Div. of Merck & Co., Inc., Philadelphia	B-11, B-13, B-15, B-17, B-19
Merrell, Wm. S., Co., The, Cincinnati	F-5
Merrill Lynch, Pierce, Fenner & Beane, New York	G-15
Miles Laboratories, Inc., Elkhart, Ind.	G-23
Miles Reproducer Co., New York	F-26
Milex of New York, Long Island City, N. Y.	G-13
Miller Surgical Co., Chicago	H-5
Minnesota Mining and Manufacturing Co., St. Paul, Minn.	G-25, G-27
Mosby, C. V., Co., St. Louis	B-9
National Biological Laboratories, Falls Church, Va.	F-32
National Drug Co., The, Philadelphia	D-6, F-11
Nordmark Pharmaceutical Laboratories, Inc., Irvington, N. J.	C-18, E-36
Organon Inc., Orange, N. J.	E-16
Ortho Pharmaceutical Corp., Raritan, N. J.	A-8, C-24, C-26
Parke, Davis & Co., Detroit	A-2
Pepsi-Cola Co., New York	B-31, B-33, B-35
Pet Milk Co., St. Louis	B-16, B-18
Pfizer Laboratories, Brooklyn, N. Y.	B-20, B-22
Pharmacia Laboratories, Inc., Rochester, Minn.	G-11
Philadelphia Serum Exchange, Philadelphia	H-2
Plough, Inc., Memphis, Tenn.	B-29
Prior, W. F., Co., Inc., Hagerstown, Md.	G-1
Procter & Gamble Co., The, Cincinnati	C-17
Purdue Frederick Co., The, New York	C-30, C-32
Pyramid Rubber Co., The, Ravenna, Ohio	G-6
Ralston Purina Co., St. Louis	D-33
Riker Laboratories, Inc., Los Angeles, Calif.	C-10
Robins, A. H., Co., Inc., Richmond, Va.	B-24, B-26, C-23, C-25
Rorer, William H., Inc., Philadelphia	F-24
Ross Laboratories, Columbus, Ohio	G-28
Rystan Co., Mt. Vernon, N. Y.	F-14
Sanborn Co., Waltham, Mass.	C-5
Santoz Pharmaceuticals, East Hanover, N. J.	E-14
Saratoga Springs Authority, Saratoga Springs, N. Y.	E-3
Saunders, W. B., Co., Philadelphia	E-2, E-4
Schering Corp., Bloomfield, N. J.	A-3, A-4, A-5, A-6, A-7, C-2, C-4, C-6, C-8
Schmid, Julius, Inc., New York	E-10
Scholl Mfg. Co., Inc., The, Chicago	F-7
Searle, G. D., & Co., Chicago	D-7, D-8, D-9, D-10
Seven-Up Co., The, St. Louis	G-33, G-35
Simmons Co., Chicago	D-29, D-31
Smith-Dorsey Div., The Wander Co., Lincoln, Neb.	F-12
Smith, Kline & French Laboratories, Philadelphia	C-1, E-35
Squibb, E. R., & Sons, New York	D-1, D-3
State Medical Journal Advertising Bureau, Inc., Chicago	F-17
Strasenburgh, R. J., Co., Rochester, N. Y.	D-15
Stuart, Co., The, Pasadena, Calif.	C-31
Swift & Co., Chicago	F-22
Tailby-Nason Co., Inc., New York	G-26
Tampax Inc., New York	C-35
Taylor Instrument Companies, Rochester, N. Y.	F-19, F-21
Training School at Vineland, The, Vineland, N. J.	G-19
U. S. Vitamin Corp., New York	F-10
Universal Products Corp., Norristown, Pa.	B-4
Walgreen Co., Chicago	A-9, A-10
Wallace Laboratories, Div. of Carter Products, Inc., New Brunswick, N. J.	D-11, D-13
Walton Laboratories, Inc., Irvington, N. J.	H-3, H-4
Warner-Chilcott Laboratories, Morris Plains, N. J.	E-11, E-13
Westwood Pharmaceuticals, Div. of Foster-Milburn Co., Buffalo	F-1
White Laboratories, Inc., Kenilworth, N. J.	E-9
Williams & Wilkins Co., The, Baltimore, Md.	B-6
Winthrop Laboratories, Inc., New York	C-20, C-22
World Medical Association, New York	G-22
Wyeth Laboratories, Philadelphia	B-12, B-14, C-21, E-12, G-23
Year Book Publishers, Inc., The, Chicago	D-35
Yorke Publishing Co., Inc., The, New York	F-33
Young, F. E., & Co., Chicago	F-31
Zimmer Manufacturing Co., Warsaw, Ind.	G-21

THE PRESIDENT'S PAGE

A MONTHLY MESSAGE

Like myself, you probably are aware of the curent, growing interest in the health and fitness of our youth. It was sparked by the 1956 Annapolis Conference on the Fitness of American Youth called by President Eisenhower. Subsequently, a Council on Youth Fitness at the Cabinet level was formed and regular meetings have been held. Last month the newly appointed President's Citizens Advisory Committee on the Fitness of American Youth, which includes six physicians, held its first meeting at West Point.

All of us in the medical profession welcome this renewed interest in youth fitness. We are particularly gratified that the proceedings of the President's conference and reports concerning the meeting of the advisory committee reflect a broad, well-conceived point of view on the fitness of American youth. For example, both groups believe that "fitness for living" must include mental, emotional, social, and moral fitness, as well as physical fitness. They also recognize that existing agencies should be used in any effort to expand fitness programs.

While I personally do not believe our youngsters are "softies," I agree with Vice President Nixon that there is an important job to do for our youth, and that improvements in fitness can be, and should be, expected.

As physicians, we have definite obligations in any such program. It is good to know that this challenge does not find us unprepared to fulfill our professional responsibilities.

In a few days the Sixth National Conference on Physicians and Schools, sponsored by the American Medical Association, will convene at Highland Park, Ill. (Oct. 30-Nov. 2). This conference, utilizing as its theme "A Decade of Progress Toward Fitness," will dramatize the A. M. A.'s long-term interest in the health and fitness of youth.

The conference, however, is only one part of a solid, day-by-day program of youth fitness carried out by the A. M. A. without fanfare.

For more than 50 years the A. M. A. has been cooperating in this work through the nation's schools. Since 1911, the A. M. A. has had a joint committee with the National Education Association on health problems in education. Because of its publications suggesting policy and practice for sound programs of health education and physical education in schools, the Joint Committee has placed itself among the most influential groups in the school health field.

In addition to the work of the Joint Committee, the A. M. A. Bureau of Health Education is concerned with various phases of youth fitness. Still another A. M. A. contributor to the over-all fitness program is *Today's Health* magazine. This publication, which goes to 30,000 schools and colleges each month, reaches innumerable youngsters with authentic health information.

While such efforts are important at the national level, it is even more vital that similar programs be carried on at the state and local levels. Many conferences on physicians and schools have been held at the state level, and similar meetings have been conducted on both regional and community levels in several states. In addition, a majority of the state and local medical societies now has a committee assigned to handle school health and fitness responsibilities. Also, there is medical representation on most school and community councils on health and fitness, and hundreds of A. M. A. members serve on boards of education and on the councils of youth-serving agencies.

Our opportunity can be, and our obligation should be, to make these same outstanding contributions in every state and every community. In developing the fitness movement the profession must provide the needed medical leadership. I am confident you will do your part for our youth, our communities, and our profession.

DAVID B. ALLMAN, M.D., Atlantic City, N. J.

ORGANIZATION SECTION

DR. BLASINGAME HONORED

Personal messages from his many physician friends and colleagues were presented to Dr. F. J. L. Blasingame of Wharton, Texas, in honor of his appointment as A. M. A. General Manager. The presentation was made during the Texas Medical Association 1957 Public Relations Conference held in September in Austin, Texas.

Dr. Blasingame (*left*) and Dr. Milford O. Rouse, Dallas, immediate past-president of Texas Medical Association (*right*), look at the presentation made to Dr. Blasingame at 1957 PR Conference in Texas.

TELEVISION-RADIO CONFERENCE IN CHICAGO

Medical societies, voluntary health organizations, and local broadcasters have been invited to a television and radio conference Nov. 7-8 at the Sheraton-Blackstone Hotel in Chicago, a joint project of the American Medical Association and the National Association of Radio and Television Broadcasters. The two organizations have planned this conference on utilization of local radio and television time by medical and voluntary health organizations.

Participating will be Harold E. Fellows, president, NARTB; Dr. David B. Allman, President, A. M. A.; Mrs. Rollin Brown, president, National Congress of Parents and Teachers; Sig Mickelson, vice-president in charge of news and public affairs, CBS; Roy E. Morgan, president, Pennsylvania Association of Broadcasters; and Dr. Robert W. Gentry, Chairman, A. M. A.'s Physicians Advisory Committee on Television, Radio, and Motion Pictures.

The first morning will be devoted to panel discussions. In the afternoon and the following morning, small groups will take up such problems as programming, promotion, medical ethics, business aspects, and news operations. The conference will present a color television demonstration to show the "medical public interest program of the future."

Registrations should be sent to the American Medical Association. The meeting is open to anyone interested in public-interest radio and television programs. Room blocks for registrants are being held at the LaSalle and Croydon hotels. The Sheraton-Blackstone, where the meeting is being held, has already exhausted its supply of rooms.

ANNUAL CONFERENCE ON MENTAL HEALTH

A large number of representatives of state medical associations, national organizations, and guests will meet in the Drake Hotel, Chicago, Nov. 22-23, to discuss problems in the field of mental health.

At the present time there are 46 state medical societies and the Medical Society of the District of Columbia that have standing committees on mental health in contrast to the total of 24 mental health committees in 1953.

Between 80 and 100 persons are expected to attend this Fourth Annual Conference of Mental Health Representatives of State Medical Associations sponsored by the A. M. A. Council on Mental Health. The conference will be presided over by Dr. Leo H. Bartemeier, Chairman of the Council on Mental Health.

Dr. George F. Lull, Secretary and General Manager of the A. M. A., will open the Plenary Session on Nov. 22. The conference participants will then go into small discussion groups. The topics are chosen on the basis of interest of state groups. The chairmen and topics for the discussion groups are are follows.

1. The Role of the General Practitioner in Relation to the Specific Psychiatric Case—Chairman, Dr. Francis M. Forster, Dean, Georgetown University School of Medicine, Washington, D. C.

2. Blue Cross–Blue Shield and Other Voluntary Health Insurance Plans for the Psychiatric Patient—Chairman, Dr. Hugh T. Carmichael, clinical professor of psychiatry, University of Illinois College of Medicine, Chicago.

3. Relationship of the Psychiatrist in Private Practice to the General Hospital in His Community—Chairman, Dr. Hamilton F. Ford, professor of neurology and psychiatry, University of Texas School of Medicine, Galveston, Texas.

4. Psychiatric and Related Mental Health Problems in Industry—Chairman, Dr. Leo H. Bartemeier, medical director, Seton Psychiatric Institute, Baltimore.

At the dinner meeting, Dr. Leo H. Bartemeier, Chairman, will introduce the speakers, Dr. Ernest B. Howard, Assistant Secretary–Assistant General Manager of the A. M. A., and Dr. Manfred S. Guttmacher, associate clinical professor of psychiatry, University of Maryland, School of Medicine and College of Physicians and Surgeons, Baltimore. Dr. Guttmacher for a considerable time served as consultant advisor on psychiatric problems to the Supreme Court of the State of Maryland and will speak on the "Role of Psychiatry in Relation to the Problem of Capital Punishment."

On Nov. 23, the reports of the discussion groups will be read and discussed in Plenary Session, and the meeting will terminate at 12 noon the same day.

DEADLINE FOR GENERAL PRACTITIONER AWARD BIOGRAPHIES

Officers of state medical societies are reminded that Nov. 1 is the deadline for submission to the A. M. A. Secretary's office of nominations for the General Practitioner award, which is given annually at A. M. A. Clinical Sessions. The award will be made for the 11th time at the Clinical Session, to be held in Philadelphia, Dec. 3-6. A complete and detailed biography must accompany all nominations.

A. M. A. PUBLIC RELATIONS INSTITUTE

More than 400 representatives of county and state medical societies attended a recent safari on medical public relations, sponsored by the A. M. A. Public Relations Department at the Drake Hotel, Chicago. This was the largest attendance at the PR Institute since the meetings were begun six years ago.

At one session 10 experts on press-medicine relations, including doctors, newspaper reporters, and medical society public relations people, agreed that medicine and the press must have a common aim—the good of the public. When both groups get together and talk over their problems, they can erase their selfish aims and work toward helping the public (composed of patients) understand medicine better.

It is the public's "right to know" about scientific advances and other phases of medicine; thus, news coverage of medicine is necessary. The medical profession might expect to benefit from such coverage since a "better-informed public makes better patients."

A feature of the institute was a session on grievance committees. Representatives of four medical society grievance committees presented actual cases to special grievance committees composed of institute participants. The special committees, along with members of the audience, heard the cases and decided how they should be handled. Public relations problems in the legislative field, professional liability problems, and doctor-lawyer cooperation were also discussed. A code of cooperation between doctors and lawyers and joint meetings were suggested as ways of furthering understanding between the two professions.

A new film entitled "Whitehall 4-1500," dealing with the many activities of the A. M. A., was premiered at the meeting. It is now available for showing at state and county meetings. Also shown were a slide film on mechanical quackery and a new series of 10-second health spots for television showing, prepared by the Bureau of Health Education. Luncheon speaker on one day of the session was Mr. K. A. MacKenzie, Topeka, Kan., who spoke on sports and medicine. MacKenzie was the star of the A. M. A. film, "The Case of the Doubting Doctor."

The 1957 A. M. A. PR Institute attracted over 400 state and county medical society representatives to Chicago, Aug. 28 and 29, to discuss community programs and public relations problems of the medical profession. Seated around the jungle campfire to discuss "Medicine and Publicity" at one of the sessions in the Drake Hotel ballroom were *(left to right)* Charles L. Hudson, M.D., Cleveland; Roland Berg, medical editor of *Look;* Thomas L. Royce, M.D., Houston, Texas; Robert D. Potter, executive secretary of the Medical Society of the County of New York; Robert Clark of the Louisville, Ky., *Courier-Journal;* and John L. Bach, Director of A. M. A. Press Relations.

Specific problems of large and small state societies and county societies with and without executive secretaries were discussed, and perhaps solved in some cases, in workshop sessions. Various new public relations projects and problems were presented to the whole group. These included the Asian influenza situation, fitness of American youth, county high school sports injury clinics for doctors and coaches, and social security coverage for physicians.

Material on the topics covered at the meeting is available from the A. M. A. Public Relations Department.

COUNCIL ON MEDICAL SERVICE

HOUSING AS A BASIC NEED OF SENIOR CITIZENS

Edna E. Nicholson, Chicago

This is the 10th of a series of papers on various aspects of aging. Each paper has been prepared for the Committee on Aging by an authority in the field. When completed, the series will be published in booklet form.

The number of "senior citizens" in the United States has been increasing steadily for many years. It is only recently, however, that the results of this increase have been felt with sufficient force to gain wide public attention. Now, with comparative suddenness, the extent of the changes that have occurred in the population and their implications for the future are being recognized. The pressure of the large number of elderly people in need of physical care and financial assistance is being felt not only by the older people and their families; it is encountered almost daily by doctors, hospitals, public health and welfare organizations, and by the taxpayers throughout the country who must pay a substantial part of the increasing cost of maintaining public assistance programs and institutions for the support and care of older people.

The time has passed when special emphasis was needed to make professional groups and the public aware of the importance of the problems of older people. Almost everyone has encountered these problems as they affect his own family or his close friends, as well as in their broader aspects. The air is filled with demands for action to improve the situation and with proposals of many kinds for solving the problems. This widespread and active interest and the accompanying demands for action are encouraging developments. They present certain hazards, however, with respect to the possibilities for assessing the problems accurately and evolving effective methods for their solution.

The demands for action now are far ahead of tested knowledge of what to do and how to do it, and many new projects are coming into existence. Entire housing developments for older people, "retirement villages," apartment houses for the aged, old peoples' homes, rest homes, boarding homes, foster homes, nursing homes, and "geriatric hospitals" are being advocated, and some are being constructed. Because the need to provide care for large numbers of older people is still a new problem and there is comparatively little tested experience to serve as a guide, most of the proposals now being considered are based necessarily on theory. The good ones are grounded in theories developed through painstaking study of experience in closely related fields, of reliable and comprehensive data on the characteristics of the people who need the services and, specifically, what it is that they need, and of full information about what already is being done by professional personnel and health and welfare organizations and through critical evaluation of the data and logical thinking leading to the conclusions.

There are some proposals, however, that seem to have resulted entirely from wishful thinking and pure imagination unrestrained by any familiarity with known facts or any real understanding of the characteristics and requirements of the older people concerned. Under these circumstances, it is especially important that medical society committees and other leaders in community service who have responsibility for evaluating the various proposals examine them critically in the light of the best information available. A considerable amount of such information is available, some of it in published form.[1] For obvious reasons, very little of this data can be included here. There are some considerations, however, that can be discussed briefly, as they may shed some light on the kinds of housing facilities that are best suited to the requirements of older people and that appear reasonable in relation to the possibilities for financing and maintaining them.

The first of these considerations is that older people should remain independent, active, integral parts of normal community life as long as possible. People who are in good health and who are fully able to manage their own lives with complete independence should do so, whether or not they happen to have passed the age of 65 or 70 or 75 years. Older people, like those of any other age, want to choose their own living arrangements and usually they greatly prefer to remain in the homes and neighborhoods where they have been living and where they have friends, relatives, and familiar surround-

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Consulting Director, the Central Service for the Chronically Ill, and Executive Director of the Institute of Medicine of Chicago.

Members of the Committee on Aging are Drs. H. B. Mulholland, Chairman, Charlottesville, Va.; Edward L. Bortz, Philadelphia; Henry A. Holle, Austin, Texas; Wingate M. Johnson, Winston-Salem, N. C.; Theodore G. Klumpp, New York; Frederick C. Swartz, Lansing, Mich.; and Cecil Wittson, Omaha. Committee Staff: Mr. George W. Cooley, Secretary, and Mr. Herbert B. Norton, Research Assistant.

ings. Comparatively few people have any desire to leave their own neighborhoods and move to special "colonies" or "projects" inhabited exclusively by people their own age. This is just as true of older people as of others, and most of them are not willing to make such a move unless there is a compelling reason for it, usually failing health and fear of the future. Many doctors know, from difficult experiences with their elderly patients, the tenacity with which older people may cling to their independence and to their own homes even after illness and infirmities have progressed far beyond the point where it seems to others reasonable or safe for them to do so.

In addition to the preferences of the older people, the question of community and governmental responsibility for financing and maintaining special facilities for particular groups of people merits consideration. No one seriously questions the need and the justification for supporting, through voluntary philanthropy and/or taxes, special facilities for care of people who are not able to take care of themselves. There seems good reason, however, to question critically whether the self-supporting people in the community should be expected to contribute to the support of special housing or other facilities for people—old or young—who are fully able to live side-by-side with everyone else in the same houses and apartments that are available to others.

Housing for Those in Good Health

At least 75 to 80% of all persons 65 years of age and over, in the United States, are entirely able to live independently in ordinary houses and apartments throughout the community. It is true, of course, that as people grow older the size of the family tends to decrease and smaller houses and apartments are desirable. Children grow up and leave home. A husband or wife may die, leaving the partner widowed and alone. The large house or apartment needed when the children were at home and all the members of the family were younger and more active may become a burden that should be sacrificed in favor of a smaller unit that can be maintained with less physical effort and at less cost financially. Ranch houses, first floor apartments, or units in elevator buildings may be preferred so there will be no stairs to climb and it will be easier to get out-of-doors. If a member of the family must use crutches or a wheel chair, wide halls and doorways will be desirable. Such safety devices as nonskid surfaces on floors and grip-bars in bathrooms may be advised.

The desirability of small housing units and of safety features like these has been cited as a reason for special housing projects exclusively for older people who are in good health. A brief examination of the housing needs of others in the population, however, casts doubt upon the validity of this conclusion. The need for small housing units easily maintained and available at reasonable cost is felt by young people just beginning their adult life as well as by the older people. Particularly in cities, there are employed women, not yet married, who want homes of their own but have limited funds and not much time to take care of them. They usually must manage with small kitchenette apartments or find roommates for companionship and to share the expense of larger places. Similarly, the elderly widow may have to manage with a small kitchenette apartment or find a roommate to offer companionship and share the expense of a larger place. The young, recently married couple whose children have not yet arrived and who have not reached the peak of their earning capacity need housing accommodations of about the same size and cost as the older couple whose children are gone and whose income has passed its peak. Even with respect to such features as first-floor apartments, nonskid floor surfaces, wide hallways, and grip-bars in the bathrooms, older people have no monopoly on the need. The mother of young children who must run from one part of the house to another innumerable times a day also finds stairs exhausting. Baby buggies need about the same amount of space in the halls and doorways as wheel chairs. Even the grip-bar near the bathtub may be as useful to the younger family as to older people. Little children sometimes slip in bathtubs and are drowned just as older people may fall and break their hips.

Good housing suited to the needs of the entire population will meet the requirements of healthy people past the age of 65 along with those of everyone else, and it is not necessary, nor is it desirable, to segregate into special "colonies" or "projects" older people whose health is good and who are fully capable of remaining independent and taking care of themselves.

Housing for Those in Failing Health

The need for special housing for older people arises when illness and infirmity have impaired their ability to maintain homes of their own. Such impairments characteristically develop slowly, and in many instances it is difficult to determine at just what point the elderly lady's arteriosclerosis, hypertension, heart disease, diabetes, or hearing loss is causing sufficient handicap to necessitate surrendering her own home and moving into special accommodations.

For many people, probably the majority, this point comes long before they are bedridden and long before they should be labeled "sick and incurable"—if, indeed, such labels ever are justified. These older people are, in fact, ill in varying degrees and their conditions are incurable, but they still are able to do many things for themselves and for others and they should be encouraged and helped to continue living as normal lives as possible. Frequently, these people are described as "in good health for their age" or as "well old people who need care." They are ambulant and can come and go with reasonable freedom as long as they stay within their limitations, but they are not able to do the washing, scrubbing, shopping, and other work necessary to maintain a home, and they cannot safely live alone in a hotel or rooming house because their mental processes have slowed, and they are forgetful, or there is danger that they may become ill during the night and require help that is not readily available.

It is an unpleasant but important reality that for all of these people the course is downhill. Some will have acute episodes and reach the end quickly. For others there will be very gradually increasing infirmity for months or years. Some will suffer cerebral vascular accidents and be left alive but paralyzed and in need of large amounts of care to rehabilitate them to whatever degree may be possible and to provide such care and attention as they need to prevent further disabilities and make their remaining days as comfortable and satisfying as possible.

The group of "senior citizens" who need special housing facilities includes people in all of these stages of disability. Many of them are "in good health for their age" and need little more than someone to maintain a home for them and to be available in case help should be required. Others need more assistance. Some are almost completely disabled and require constant nursing care. All of them, however, desperately need places to live where they can have a real feeling of "home," where they can be encouraged and helped to use all the capacities they still have, and where they can live as nearly normally as possible. And all of them need, in addition to four walls and a roof, some degree of protection and help.

It is important in planning any special facilities for the housing of older people to keep these facts in mind. In many instances, in efforts to avoid or postpone the facing of the unpleasant reality, proposals are made for the establishment of separate facilities exclusively for the people who still are in the early phases and require only minimum services. The explanation usually given is that these people are "well" and the others are "sick" and that having sick people in the facilities where the "well" people are living would be depressing and would make a true home impossible. These assumptions are not supported by experience, however. With the proper intent and reasonable effort, it is entirely possible to give good care to those who are infirm or badly disabled and still maintain homelike surroundings. It may be emphasized, also, that in many respects it is the people who are most severely disabled who are most in need of the comfort and security of a truly homelike atmosphere. The better the individual's health, the greater are his opportunities to find satisfactions in other ways, and it is a tragic mistake to assume that the only people for whom a homelike atmosphere is important are those who are still in comparatively good health.

The assumption that the "well" people will find it depressing if they are housed in the same facilities that provide services for those who require more care also fails to find support in actual experience. One of the strongest influences in bringing older people out of their own homes to enter any special housing arrangement is fear of what may happen when they no longer can take care of themselves. They are seeking the security of knowing that, as they become increasingly infirm, someone they can trust will be there to care for them. This is their primary need, and, whether or not they face it openly, it is fundamentally the thing they are seeking. Obviously, it is not desirable nor is there any necessity to ask the elderly lady who still is in fair health to move into the same room with a patient who has extensive paralysis and is incontinent. There is no reason why the people who are ambulant and fairly self-sufficient should not be housed in one wing or on one floor of the building while those with greater infirmities are in other sections. At the point when the elderly person must leave his own home and go to any special facility, however, he should be going to a place that can become his home for the remainder of his life and where he can stay as his infirmities increase and more care is required.

Importance of Home Atmosphere

As health declines and physical independence is lost, any change tends to be contemplated with increasing fear and resistance by the patient. One of the most painful experiences in life comes at the point when one must give up his own home and the independence and status that go with it and go to live in a place where others make the decisions that control his way of living. This is true even when the move is to the home of a son or daughter. It may hold even greater fear and sorrow if the elderly person is going to live among strangers in a special accommodation for old people. If he is fortunate enough to move into good surroundings with kind and understanding people in control, he may come through the ordeal with a minimum of suffering and gradually may develop confidence and some feeling of security in his new surroundings and in the people who control them. This will be difficult or impossible, however, if he does not have real stability in his new home, especially the security of knowing that as his infirmities increase there will be someone whom he can trust to care for him.

This is a compelling argument for seeing the patient's total problem and for developing facilities that will be prepared to care for him not only during the temporary period while he needs very little service but also as his requirements increase. Any facility designed for housing and care of older people should be prepared to continue providing the necessary care as its residents grow older and more infirm. Special facilities operated exclusively for so-called well old people who are ambulant and comparatively self-sufficient are not desirable. The requirements of older people are not static, and a chain of separate facilities, each of which offers care only at one particular stage of the patient's infirmity, represents a harsh solution from the patient's point of view and a form of organization of institutions and agencies that is unnecessarily expensive and almost unworkable from the point of view of good administration and good organization of community services.

For roughly two-thirds of the older people who have reached the point where they no longer can maintain their own homes without help, the problem is met within their own resources and by their families and friends. In only about one-third of the cases is there a need for special facilities maintained by the community. The difficulties and annoyance encountered when a family fails to accept its responsibility for care of an elderly person sometimes are so great that they obscure the many instances in which families are taking full responsibility and are discharging it with generosity and kindness far beyond anything that reasonably might be expected from them.

Even with only about one-third of these older people dependent upon facilities maintained by the community, however, the number is large. There are approximately a million people in this group in the United States at the present time and the average community needs about 5 beds per 1,000 population to house and care for them. The special facilities maintained by the community for housing and care of its "senior citizens" should be homes in the best sense of the term and should be so constructed and operated that they encourage and help the older people to maintain as active and normal lives as possible. This is true for the elderly people who are ill, infirm, and in need of large amounts of care as well as those who still are ambulant and fairly self-sufficient. The missing link in the chain of facilities for care of the aged and for care of the sick and handicapped, in general, is not a facility for the diagnosis and specialized treatment of illness or injury. General hospitals are providing these facilities for older people along with everyone else and they should continue to do so. The lack is in homes for people who have continuing infirmities and illness, who require good care in varying amounts but do not need the highly specialized equipment, personnel, and routines of general hospital wards, who are not able to maintain homes of their own, and who do not have families and friends with whom they can, and want to, live and receive care.

The character of these facilities should be understood clearly as that of a home. They should not attempt to become junior-grade hospitals and they should not be permitted to do so. The need for them arises from the fact that the residents cannot continue to maintain their own homes and do not have satisfactory homes available with their families or friends. They must, therefore, look to philanthropic organizations or governmental units to establish and operate facilities that will offer them the best possible substitutes for good homes of their own.

Essentially, these are substitutes for the patients' own independent homes and the relationship between these facilities and general hospital units should be essentially the same as between other people's homes and the hospital. The facilities may be—and it is highly desirable that many of them should be—operated as units of general hospitals on the same grounds, under the same administration, and with cooperative use of staff and equipment with the general hospital wards. The furnishings, staff, and atmosphere in these units, however, still should be, and can be, consistent with a home rather than the highly organized routines of the general hospital wards.

Any special facilities for housing and care of older people should include provisions for good and consistent medical attention and health supervision for all residents as well as good nursing services. If the facilities are not an integral part of a general hospital, they should be so located and administered that the services of a good general hospital are easily and promptly accessible. People who are living in facilities of this kind should be able to receive in them approximately the same kinds and amounts of care that other people receive with their families in their own homes and, like those who are living in individual homes, they should be taken to the hospital when specialized services are required.

Summary

"Senior citizens" should remain active and independent members of the general community as long as they are able to do so. Special housing facilities are not needed nor are they desired by healthy older people who are fully able to live independently and maintain their own homes. The need for special housing arises when the older person no longer is able to maintain his own home and live with complete independence. Many of these people are in "reasonably good health for their age" and require only minimum care. For all of them, however, the course will be downhill and increasing amounts of care will be required as time goes on. The break away from his own home is extremely difficult, and when it must be made, the individual should be able to go to another place where he can stay as long as he needs a home anywhere. Consequently, special housing projects and institutions operated exclusively for elderly people who are ambulant and self-sufficient are not desirable. Any special facilities for older people should be prepared to continue meeting their needs as infirmity increases and more care is required. Even though all the people in need of this care have some degree of illness and infirmity, it is homes, not hospitals, that they need. The emphasis should be on a homelike atmosphere, with encouragement for every individual—even those with advanced infirmity—to live as active and normal a life as possible; at the same time good medical attention and nursing services should be provided in whatever amounts may be required. Finally, advancing age is a universal experience and the ultimate test of any proposal for new facilities for "senior citizens" is an honest appraisal of whether or not it will be adequate and acceptable for you and for me when our times come.

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LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Expert Testimony: Right of Compensation Deputy to Order Claimant to Be Examined by Impartial Expert.—This was a petition for an increase in disability payments four years after an industrial accident. From the granting of an increase by the hearing deputy, the respondent appealed to the Essex County court, New Jersey.

The petitioner sustained an industrial accident in 1951 and as a result thereof the four fingers of his right hand were amputated. He was granted an award including 5% of total disability for a consequent neurosis. Four years later he filed this petition, contending that the consequent neurosis had increased. He produced the testimony of two doctors, one of whom had testified at the original hearing that the disability due to neurosis at that time was 12½%. Both doctors now testified that the disability had increased to 50%. The respondent called one doctor who had also testified in the original hearing, at which time he had estimated disability due to neurosis at 2½%. In his opinion, it was still 2½%.

On the basis of this marked divergence between the findings and estimates of the opposing medical experts, the deputy felt that the evidence presented did not provide a basis upon which he could render a reasonable decision. He felt intellectually insecure as to the medical facts and therefore determined that the situation called for the expression of an opinion by an impartial, disinterested neuropsychiatrist based on a complete neuropsychiatric examination of the petitioner. He therefore selected a neuropsychiatrist recommended by the medical director of the division of workmen's compensation and requested both parties to have the petitioner examined by him. The testimony of this expert was taken later and both petitioner and respondent given the opportunity to cross-examine him. His testimony was considered by the deputy and an award made in the amount of 25%. The respondent objected vehemently and refused to cross-examine. It contended that the deputy had no authority to direct the petitioner to be examined by an expert selected by the deputy without the consent of, and over the objection of, the respondent.

The court held that it was within the power of the deputy to choose his own expert, have him examine the petitioner, and call him to testify. If the judge suspects the "expertness" or the honesty of the experts on both sides, continued the court, what is he to do? Or where, as here, the judge does not doubt their expertness, and has no basis upon which to discount their credibility but the testimony is as far apart as it was here, what is he to do? It is sometimes said that in evaluating the credibility of a witness, the trier of fact may take into consideration the inherent probability of his testimony tested by common human experience, the surrounding circumstances, the demeanor of the witness, his manner of testifying, etc. These are of little or no use in evaluating the credibility of an expert. The deputy well stated his dilemma when he said, "the medical testimony . . . was so divergent that I, as a layman, was unable to determine where the medical fact lay." In short, when the experts are as far apart as these, what means does the trier of fact have to decide which expert's testimony to accept?

The court concluded that the deputy did just what he was entitled to do and it affirmed the deputy's findings. *Polulich v. J. G. Schmidt Tool and Die and Stamping Co., 134 A (2) 29 (New Jersey, 1957).*

MEDICAL NEWS

FLORIDA

Appoint Director of Surgery Department.—Dr. Edward R. Woodward has been appointed professor and head of the department of surgery at the University of Florida College of Medicine, Gainesville. He is former associate professor of surgery, University of California at Los Angeles. In 1953 he was appointed to the faculty of the University of California Medical Center. During this time he continued his work as a Markle scholar in medical sciences. As professor of surgery at the University of Florida College of Medicine and surgeon-in-chief of the Teaching Hospital, Dr. Woodward will set up the curriculum for third and fourth-year medical students, and the intern and residency program for the hospital. Dr. Woodward is a diplomate of the American Board of Surgery, a fellow of the American College of Surgeons, and a member of the Society of University Surgeons. He was appointed recently to the Advisory Committee on Personnel for Research of the American Cancer Society.

ILLINOIS

Lecture on Childhood Emotional Problems.—The second lecture in the eighth annual North Shore Hospital lecture series on emotional problems of childhood will be given Nov. 6 by Dr. Julius B. Richmond, chairman, department of pediatrics, State University of New York College of Medicine, Syracuse. Dr. Richmond's subject is "Management of Eating, Sleep, and Rhythmic Habits."

Chicago

University News.—A. K. Saha, professor of surgery, Nilratan Sircar Medical College, Calcutta, India, and Hunterian Professor of the Royal College of Surgeons of England, F. R. C. S., was a guest of the department of orthopedic surgery, Northwestern University Medical School, recently. He described his technique and showed his movie, "Management of Unilateral Flail Lower Extremity by Abdominal Muscle Transference—Post-Poliomyelitic."

Hospitals Merge.—The consolidation of the Presbyterian and St. Luke's Hospital, will provide at one location on the West Side a modern, well-equipped hospital of 1000 beds, a professional building for staff doctors, an expanded outpatient clinic, a school of nursing, and a building specifically devoted to laboratories for research and service. Plans also call for a new apartment building for personnel and remodeling of present Presbyterian Hospital buildings. These buildings and services will be in close proximity to the University of Illinois College of Medicine, with which the hospital has strong teaching ties.

Annual Fraternity Lecture.—The ninth annual lectureship of the Phi Delta Epsilon Fraternity, sponsored jointly by the chapters at the Chicago Medical School, Northwestern University, and the University of Illinois, and by the Chicago Graduate Club, will be presented by Dr. Richard J. Blandau, University of Washington School of Medicine, Seattle. Lecture topics and schedule are as follows:

Ovulation and egg transport in the mammal, Nov. 4, 1 p. m., Chicago Medical School, Kling Auditorium, Mt. Sinai Hospital.
Recent observations on orientation and implantation of the mammalian egg, Nov. 5, 4 p. m., Thorne Hall, Northwestern University Medical School.
Fertilization phenomena in the mammal, Nov. 6, 1 p. m., Room 221 DMP Building, University of Illinois College of Medicine.

Research Program on Traffic Accidents.—A three-year research program to obtain information on the nature and causes of traffic accidents has been launched at Northwestern University's Traffic Institute. The project is financed by grants from the Automotive Safety Foundation and the federal government. Grants totaling $105,000 have been received to finance the project's first year. Cost of the program over the three-year period will be about $350,000. A mobile three-man team consisting of a medical scientist, an engineering scientist, and a social scientist will be employed to investigate traffic accidents under a wide variety of road, traffic, lighting, and vehicle conditions.

Personnel are being recruited for the interdisciplinary team, and applications for the position of medical scientist are invited. For information write Dr. Edward S. Petersen, Northwestern University Medical School, Room 492 Ward Building, 303 E. Chicago Ave., Chicago.

KANSAS

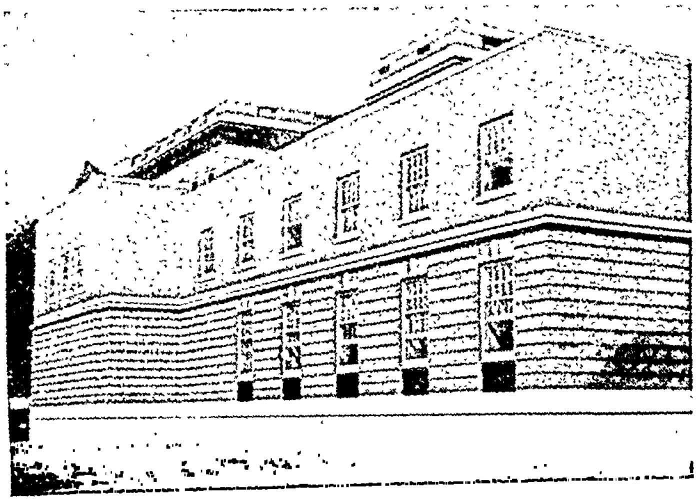
Hertzler Memorial Symposium.—The first annual Hertzler memorial symposium, sponsored by the Hertzler Clinic and the Hertzler Research Foundation, will be held Nov. 2 at the Training School Auditorium, Halstead. The subject will be "Thyroid Disease," and the program includes the following topics and speakers:

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

Pathology of Thyroid Disease, Dr. C. A. Hellwig, Halstead.
Physiology of Thyroid Disease and Pharmacology of Treatment, Dr. Arthur Grollman, Southwestern Medical School of the University of Texas, Dallas.
Clinical Aspects of Thyroid Diseases, Dr. Edward H. Hashinger, University of Kansas School of Medicine, Kansas City.
Thyroid Disease in Children, Dr. George Clayton, Baylor University College of Medicine, Houston, Texas.
Surgical Aspects of Thyroid Disease, Dr. V. E. Chesky, Halstead.
Use of Isotopes in Thyroid Disease, Dr. E. N. McCusker, Halstead, and D. L. Tabern, Ph.D., Abbott Laboratories.

A panel discussion on thyroid disease will be moderated by Dr. Homer Hiebert, Topeka.

Dedicate Medical Library Building.—The new $520,000 library building at the University of Kansas School of Medicine in Kansas City, Kan., was dedicated Sept. 13, and named "Clendening Medical Library," to honor the late Dr. Logan Clendening, founder of the school's history of medicine department and library. Prior to his death 12 years ago, Dr. Clendening had been on the faculty of the medical school for 30 years. The dedication speaker was Col. Frank B. Rogers, M. C., U. S. Army, director of the National Library of Medicine, Washington, D. C. The four-level air-conditioned structure with 27,000 square feet of space, is built to house 120,000 volumes in the general library and to accommodate 180 readers.



New Library building at University of Kansas School of Medicine, Kansas City.

MISSISSIPPI

Symposium on Tranquilizing Drugs.—The department of psychiatry, University of Mississippi School of Medicine, and the Mental Health Committee of the Mississippi State Medical Association will hold a one-day symposium on "Tranquilizing Drugs" at the University Medical Center, Jackson, Nov. 6. Discussants will be Dr. Ralph Gerard, chairman, National Advisory Committee to the Psychopharmacology Service Center, U. S. Public Health Service; Dr. James G. Miller, chief, Mental Health Research Institute, University of Michigan School of Medicine, Ann Arbor; and Dr. Raymond W. Waggoner, chairman, department of psychiatry, University of Michigan School of Medicine. Attendance will be acknowledged for four hours category I credit by the American Academy of General Practice.

NEW JERSEY

Jersey City Alumni Association.—The 10th annual program of the Jersey City Medical Alumni Association will be held in conjunction with the 50th anniversary of the School of Nursing, Nov. 8-9. The program includes symposiums on basic sciences and a general topic, "Recent Advances in Cardiovascular Diseases." Dr. Paul Dudley White, Boston, will be guest speaker at the banquet, Nov. 8. A dance will be held Nov. 9. For information write Dr. Samuel Cohen, Secretary, 100 Clifton Place, Jersey City, N. J.

Personal.—Oskar Wintersteiner, Ph.D., director, Division of Organic Chemistry, Squibb Institute for Medical Research, New Brunswick, has been appointed a member of the Board of Scientific Counselors of the National Institute of Arthritis and Metabolic Diseases of the U. S. Public Health Service in Bethesda, Md. Dr. Wintersteiner, an honorary professor of biochemistry at Rutgers University, is a member of the editorial board of the *Journal of Biological Chemistry.*

NEW YORK

Name Chairman of Ophthalmology Department.—Dr. James L. McGraw, Syracuse, has been appointed professor and chairman of the department of ophthalmology, State University College of Medicine in Syracuse, succeeding Dr. Franklin R. Webster, who has been department chairman since 1951. Dr. McGraw has been associated with the department since 1947. He is a former president of the Central New York Eye, Ear, Nose and Throat Society, and the Onondaga county and state medical societies, and is a fellow of the American Academy of Ophthalmology and Otolaryngology.

VIRGINIA

State Society Meets in Washington, D. C.—The 110th meeting of the Medical Society of Virginia will be held Oct. 27-30 at the Hotel Shoreham, Washington, D. C. Addresses will be presented by Dr. James D. Hagood, president of the society, and by Joseph C. Robert, president, Hampden-Sydney College, Hampden-Sydney. Guest speakers include Col. Thomas W. Mattingly, M.C., Washington, D. C.; Drs. John H. Talbott, New York City; Owen Gwanthmey, Washington, D. C.; Paul O. Klingensmith, Philadelphia; R. Arnold Griswold, Louisville, Ky.; and Dr. Leo H. Bartemeier, Baltimore; Representative Kenneth A. Roberts (Alabama), Washington, D. C.; and Mr. John J. Agnew, Washington. The program includes a symposium on obstetrics and gynecology and the following panel discussions: elected maternal deaths occurring in Virginia in 1956, prevention of automobile injuries and deaths; and religion and medicine. Entertainment includes a banquet Oct. 29. Technical exhibits are planned. For information write Mr. R. I. Howard, 1105 W. Franklin St., Richmond 20, Va.

GENERAL

Industrial Hygiene Meeting.—The 22nd annual meeting of the Industrial Hygiene Foundation will be held at the Mellon Institute, Pittsburgh, Oct. 30-31. Medical, legal, engineering, chemical-toxicological, and management conferences will be held. Symposiums on advances in chemotherapy and on odors are planned. Two panel discussions are arranged: new socio-medical concepts involving industry, with Jacob J. Blair, professor of industry, University of Pittsburgh, moderator; and the functions of industrial relations departments pertaining to workmen's compensation, with James L. Hill as moderator. Gen. Matthew B. Ridgway, chairman, board of trustees, Mellon Institute, will present an address Oct. 31. For information write the Industrial Hygiene Foundation, 4400 Fifth Ave., Pittsburgh 13.

Surgeons Meeting in Honolulu.—The seventh congress of the Pan-Pacific Surgical Association will be held Nov. 14-22 at the Hawaiian Village Hotel, Honolulu. Dr. Arthur W. Allen, president of the association, will present an address Nov. 14. A field trip will be made to Hale Mohalu Hospital. The program includes the following symposiums: amputations, artificial bladders, back ache in industry, carcinoma of the breast, lesions of the colon, and noise in industry. Presentations will be made by speakers from Viet Nam, Mexico, Canada, Australia, Burma, Cuba, England, Japan, New Zealand, Singapore, the Philippines, Taiwan, India, Hong Kong, Tasmania, and the United States. A total of 23 films are scheduled. Entertainment includes the governor's reception Nov. 19 and a visit to the Bishop Museum. A special ladies' program is arranged. For information write Dr. John P. Frazer, 1133 Punchbowl St., Honolulu, Hawaii.

Plastic Surgeons Meeting in San Francisco.—The 26th annual meeting of the American Society of Plastic and Reconstructive Surgery will be held Nov. 3-8 at the Fairmont Hotel, San Francisco. The presidential address, "Residency Training in Plastic Surgery," will be given by Dr. S. Milton Dupertuis. Seventy-one papers are scheduled for presentation. Mr. Nils Andersen, director general, Tourist Bureau, Copenhagen, will present "The European Traveler, 1958" at the president's banquet Nov. 7. Thirteen medical films will be presented. Dr. Kaj. Holmstrand, Stockholm, Sweden, will present his senior award-winning essay (1956), "Biophysical Investigations of Bone Transplants and Bone Implants," and Dr. F. S. Hoffmeister, Buffalo, N. Y., will present his junior award-winning essay, "Study of Circulation in Flaps," the morning of Nov. 5. Exhibits are planned. Entertainment includes the society dinner, Nov. 4. For information write Dr. Kenneth Pickrell, General Secretary, American Society of Plastic and Reconstructive Surgery, Duke University Hospital, Durham, N. C.

Omaha Mid-West Clinical Meeting.—The 25th annual assembly of the Omaha Mid-West Clinical Society will be held Nov. 4-7 at the Sheraton-Fontenelle Hotel, Omaha. Four panel discussions are planned as follows: pelvic injuries, problems of adolescence, clinical use and abuse of steroids, and cesarean sections. Luncheon question and answer periods and dinner discussion sessions are planned. The program includes the following guest speakers: Drs. Kenneth E. Appel, Philadelphia; Alvin L. Barach, New York City; Clyde G. Culbertson, Indianapolis; James G. Hughes, Memphis; Victor F. Marshall, New York City; John H. Moe, Minneapolis; Carl A. Moyer, St. Louis; G. O'Neill Proud, Kansas City, Kan.; Hyrum R. Reichmann, Salt Lake City; Herbert E. Schmitz, Chicago; Dr. Eric Wollaeger, Minneapolis, and Col. John P. Stapp, M.C., Holloman Air Force Base, New Mexico. Scientific motion pictures will be presented daily. Scientific and technical exhibits are scheduled. For information write the Omaha Mid-West Clinical Society, 1031 Medical Arts Building, Omaha 2.

Conference on Electrical Techniques in Medicine.—The 10th annual conference on electrical techniques in medicine and biology will be held Nov. 6-8 at the Sheraton-Plaza Hotel, Boston. The purpose of this conference is to bring together electrical engineers, physicians, biologists, electronic instrumentologists, radiation physicists, physiologists, and others to discuss electrical and electronic techniques in biology and medicine and to arrange symposiums on current problems. The conference is sponsored by the Instrument Society of America, the American Institute of Electrical Engineers, the Boston Chapter of the Professional Group on Medical Electronics of the Institute of Radio Engineers, and the Medical Physics Group of Boston. Themes for the discussion session include the following: "Instrumentation for Circulation Research" and "Membrane Potentials and Ionic Transfer Phenomena." Two panel discussions are planned: Problems in Sensory Perception and Replacement, with Mr. Wallace E. Frank, Franklin Institute, Philadelphia, as chairman, and Education and Research in Biophysical Engineering, with Mr. Graham Du Shane, Washington, D. C., as chairman. Tours and field trips are planned. Registration fee is $6. For information write Dr. Duncan A. Holaday, Conference Chairman, Columbia University College of Physicians and Surgeons, New York 32.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States, its territories and possessions in the weeks ended as indicated:

Area	Sept. 28, 1957		Sept. 29, 1956
	Paralytic Type	Total Cases	Total Cases
New England States			
Maine	...	...	...
New Hampshire	...	...	...
Vermont	...	...	1
Massachusetts	1	2	3
Rhode Island	...	...	...
Connecticut	...	2	1
Middle Atlantic States			
New York	4	11	61
New Jersey	1	6	10
Pennsylvania	...	...	12
East North Central States			
Ohio	3	9	41
Indiana	8	11	17
Illinois	6	17	58
Michigan	5	25	13
Wisconsin	2	3	31
West North Central States			
Minnesota	3	3	11
Iowa	2	6	44
Missouri	2	4	21
North Dakota	...	1	6
South Dakota	...	...	...
Nebraska	1	2	6
Kansas	...	...	8
South Atlantic States			
Delaware	...	...	...
Maryland	2	3	13
District of Columbia	5	7	...
Virginia	6	10	14
West Virginia	10	12	5
North Carolina	3	9	7
South Carolina	3	8	5
Georgia	3	3	10
Florida	1	3	8
East South Central States			
Kentucky	7	9	10
Tennessee	5	9	4
Alabama	...	...	...
Mississippi	...	...	18
West South Central States			
Arkansas	1	2	14
Louisiana	6	6	26
Oklahoma	1	6	...
Texas	3	8	33
Mountain States			
Montana	...	...	1
Idaho	...	4	1
Wyoming	...	1	...
Colorado	3	3	6
New Mexico	...	...	3
Arizona	1	6	3
Utah	...	2	8
Nevada	...	...	2
Pacific States			
Washington	1	1	10
Oregon	...	...	5
California	5	14	74
Territories and Possessions			
Alaska	...	...	1
Hawaii	...	...	1
Puerto Rico	1	1	...
Total	106	232	656

Personal.—Dr. Harold B. Houser, assistant professor of medicine, New York State University College of Medicine, Syracuse, has returned after a four-week study of an Asian flu epidemic in Chile. Other members of the team were Dr. Fred Davenport, Dr. Albert Hennessy, and Ward Peterson, of the University of Michigan, and Dr. Willard Schmidt of Western Reserve University.

Society News.—At its annual meeting the American **Ophthalmological Society** elected the following officers for the coming year: president, Dr. Walter S. Atkinson, Watertown, N. Y.; vice-president, Dr. Derrick Vail, Chicago; secretary-treasurer, Dr. Maynard C. Wheeler, New York; editor, Dr. Gordon M. Bruce, New York.——At the recent annual meeting of the **Rocky Mountain Radiological Society**, new officers for 1958 were elected as follows: Drs. Angus K. Wilson, president, Salt Lake City, Utah; George A. Unfug, president-elect, Pueblo, Colo.; John W. Walker, first vice-president, Kansas City, Mo.; Jack W. Grossman, second vice-president, Albuquerque, N. M.; John H. Freed, secretary-treas., 4200 E. Ninth Ave., Denver 20; H. Milton Berg, historian, Bismarck, N. D. The meeting dates for next year are August 14, 15, and 16, 1958. The meeting will be held at the Shirley-Savoy Hotel, Denver.—Officers elected to serve in 1957-1958 in the American **Association of Obstetricians and Gynecologists** are as follows: president, Drs. S. William Mengert, Chicago; president-elect, Joe Meigs, Boston, vice-president, J. Bay Jacobs, Washington, D. C.; secretary, E. Stewart Taylor, Denver; assistant secretary, Clyde Randall, Buffalo; and treasurer, Harold Gainey, Kansas City, Mo.

Fellowships for Natural Science Research.—The National Science Foundation announces that applications are being accepted in four National Science Foundation fellowship programs for advanced study and research in the natural sciences:

(1) A predoctoral fellowship program for which college seniors and graduate science students may apply;
(2) A postdoctoral fellowship program for scientists who have already received the doctoral degree;
(3) A senior postdoctoral fellowship program for candidates who have held the science doctorate for a minimum of five years; and
(4) A science faculty fellowship program for college teachers of science who wish to improve their competence as teachers.

About 1,000 awards will be made in March, 1958. Fellowships are awarded to American citizens who have shown special aptitude in science and who will begin or continue their studies at the graduate or postdoctoral level. Fellowships will be awarded in the mathematical, physical, medical, biological, engineering, and other sciences. Predoctoral fellowship applicants are required to take the Graduate Record Examination. Final selection will be made by the National Science Foundation. Stipends vary from $1,600 to $3,800, depending on academic status. Senior postdoctoral fellows and science faculty fellows are awarded stipends to match as closely as feasible the regular salaries of the award recipients, up to a maximum of $10,000 per year. Travel allowance is usually available. Fellows may attend any accredited nonprofit institution of higher education in the U. S. or abroad. Applications may be obtained from the Fellowship Office, National Academy of Sciences–National Research Council, 2101 Constitution Avenue, N. W., Washington 25, D. C. Closing dates for receipt of applications are Dec. 23, 1957, for postdoctoral applicants, and Jan. 3, 1958, for graduate students working toward advanced degrees in science. Applications for the senior postdoctoral and the science faculty fellowships may be obtained from the Division of Scientific Personnel and Education, National Science Foundation, Washington 25, D. C. Completed material must be received not later than Jan. 13, 1958.

CORRECTION

Meralgia Paresthetica.—In the Medical Literature Abstract entitled "Meralgia Paresthetica" which appeared in The Journal, Sept. 21, page 293, lines 12 and 13 in the right-hand column should have read "should be suspect" rather than "suspected."

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 17-19. Sec., Dr. D. G. Gill, State Office Building, Montgomery 4.

Arizona:* *Examination and Reciprocity.* Phoenix, Oct. 16-18. Exec. Sec., Mr. Robert Carpenter, 826 Security Bldg., Phoenix.

Arkansas:* *Examination and Reciprocity.* Little Rock, Nov. 7. Sec., Dr. Joe Verser, Harrisburg.

California: *Written Examination.* Sacramento, Oct. 21-24. *Oral Examination.* San Francisco, Nov. 16. *Oral and Clinical for Foreign Graduates.* San Francisco, Nov. 17. Sec., Dr. Louis E. Jones, 1020 N St., Sacramento 14.

Colorado:* *Examination.* Denver, Dec. 3-4. Exec. Sec., Mrs. Beulah H. Hudgens, 715 Republic Bldg., Denver 2.

Connecticut:* *Examination.* Hartford, Nov. 12-14. Sec., Dr. Creighton Barker, 160 St. Ronan St., New Haven.

Delaware: *Examination.* Dover, Jan. 14-16. *Reciprocity.* Dover, Jan. 23. Dr. Joseph S. McDaniel, Professional Bldg., Dover.

District of Columbia:* *Examination.* Washington, Nov. 12-13. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave., N.W., Washington, D. C.

Florida:* *Examination.* Miami, Nov. 24-26. Sec., Dr. Homer L. Pearson, 901 N.W. 17th St., Miami 36.

Idaho: *Examination and Reciprocity.* Boise, Jan. 13-15. Ex. Sec., Mr. Armand L. Bird, 364 Sonna Bldg., Boise.

Iowa:* *Examination.* Des Moines, Dec. 2-4. Exec. Sec., Mr. Donald V. Saf, State Office Building, Des Moines 19.

Kentucky: *Examination.* Louisville, Dec. 9-11. Sec., Dr. Russell E. Teague, 620 South Third St., Louisville 2.

Maine: *Examination.* Portland, Nov. 12-14. *Reciprocity.* Portland, Nov. 12. Sec., Dr. Adam P. Leighton, 142 High St., Room 514, Portland.

Maryland: *Reciprocity.* Baltimore, September. *Examination.* Baltimore, Dec. 10-13. Sec., Dr. Frank K. Morris, 1211 Cathedral St., Baltimore.

Massachusetts: *Examination.* Boston, Jan. 14-17. Sec., Dr. Robert C. Cochrane, 37 State House, Boston.

Minnesota:* *Examination and Reciprocity.* Minneapolis, Oct. 15-17. Sec., Dr. F. H. Magney, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, December. *Examination.* Jackson, June. Asst. Sec., Dr. R. N. Whitfield, Old Capitol, Jackson 113.

Nebraska:* *Examination.* Omaha, June. Sec., Mr. Husted K. Watson, Room 1009, State Capitol Bldg., Lincoln 9.

New Jersey: *Examination.* Trenton, Oct. 15-18. Sec., Dr. Patrick H. Corrigan, 28 W. State St., Trenton.

New Mexico:* *Examination and Reciprocity.* Santa Fe, Nov. 18-19. Sec., Dr. R. C. Derbyshire, 227 East Palace Ave., Santa Fe.

New York: *Examination.* Albany, Buffalo, New York and Syracuse, Dec. 10-13. Sec., Dr. Stiles D. Ezell, 23 South Pearl St., Albany 7.

North Dakota: *Examination.* Grand Forks, Jan. 9-12. *Reciprocity.* Grand Forks, Jan. 12. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 17-19. Dr. H. M. Platter, 21 W. Broad St., Columbus 5.

Oklahoma: *Examination.* Oklahoma City, Dec. 14-15. Sec., Dr. E. L. Lester, 813 Braniff Bldg., Oklahoma City.

Oregon:* *Examination.* Portland, January. Exec. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

South Carolina: *Examination.* Columbia, Dec. 10. Sec., Dr. H. E. Jarvey, Jr., 1329 Blanding St., Columbia.

South Dakota:* *Examination.* Sioux Falls, Jan. 21-22. Exec. Sec., Mr. John C. Foster, 300 First National Bank Bldg., Sioux Falls.

Texas:* *Examination and Reciprocity.* Fort Worth, Dec. 5-7. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

Utah: *Examination.* Salt Lake City, July 9-11. Director, Mr. Frank E. Lees, 324 State Capitol Bldg., Salt Lake City 1.

Virginia: *Reciprocity.* Richmond, Dec. 4. *Examination.* Richmond, Dec. 5-7. *Address: Office of the Secretary,* 631 First St., S.W., Roanoke.

Washington:* *Examination.* Seattle, Jan. 13-15. Sec., Mr. Thomas A. Carter, Capitol Bldg., Olympia.

West Virginia: *Examination.* Charleston, January. Sec., Dr. Newman H. Dyer, State Office Bldg., No. 3, Charleston 5.

Wisconsin:* *Reciprocity.* Madison, Oct. 18. *Examination.* Madison, January. Sec., Dr. Thomas W. Tormey, Jr., 1140 State Office Bldg., Madison.

Alaska:* On application in Anchorage and Juneau. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

Guam: *Subject to Call.* Act. Sec., Dr. S. F. Provencher, Agana.

Hawaii: *Examination.* Honolulu, Jan. 13-14. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

Virgin Islands: *Examination.* St. Thomas, Nov. 13. Sec., Dr. Earle M. Rice, Charlotte Amalie, St. Thomas.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

District of Columbia: *Examination.* Washington, Oct. 21-22. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave., N. W., Washington, D. C.

Florida: *Examination.* Gainesville, Nov. 9. Sec., Mr. M. W. Emmel, Box 340, University of Florida, Gainesville.

New Mexico: *Examination.* Santa Fe, Oct. 20. Sec., Mrs. Marguerite Cantrell, Box 1522, Santa Fe.

South Dakota: *Examination.* Vermillion, Dec. 6-7. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Texas: *Examination.* Austin, Oct. 18-19. Chief Clerk, Miss Pearl A. Barrera, 407 Perry-Brooks Bldg., Austin.

Wisconsin: *Examination.* Milwaukee, Dec. 7. Sec., Mr. William H. Barber, 621 Ransom St., Ripon.

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*Basic Science Certificate required.

DEATHS

Moss, William Lorenzo ⊕ Athens, Ga.; born in Athens, Aug. 23, 1876; Johns Hopkins University School of Medicine, Baltimore, 1905; member of the Association of American Physicians, American Association for the Advancement of Science, American Society for Clinical Investigation, American Academy of Arts and Sciences, American Society of Tropical Medicine, and Phi Beta Kappa; from 1931 to 1934 dean and professor of preventive medicine at the University of Georgia Medical Department in Augusta; served on the medical faculties of his alma mater, Harvard and Yale universities; in 1914-1915 internist at the State Institute for the Study of Malignant Diseases in Buffalo, N. Y.; in 1916 was in charge of a Harvard expedition to Peru and in 1920 was a member of a Harvard commission to the Dominican Republic; veteran of World War I; served as an associate examiner on the Boston Subsidiary Board of the National Board of Medical Examiners; received an honorary doctor of science degree from the University of Georgia in 1928; known for his research in the fields of blood groupings and of tropical and hemorrhagic diseases; died Aug. 12, aged 80.

Johnson, Hobart Clemens ⊕ Mankato, Minn.; born in Olsburg, Kan., March 11, 1897; University of Minnesota Medical School, Minneapolis, 1926; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology, Association for Research in Ophthalmology, World Medical Association, Royal Society of Tropical Medicine and Hygiene (England) and the Minnesota Academy of Science; past-president and member of the council, Minnesota Academy of Ophthalmology; senior member of Pan-American Association of Ophthalmology; at one time a medical missionary in East Africa; member of the staffs of Immanuel Hospital and St. Joseph's Hospital; for nine years served as a board member and member of the executive committee of the board, Gustavus Adolphus College, St. Peter, where in 1957 he received the Greater Gustavus Award, an alumni citation; died in St. Mary's Hospital, Duluth, July 23, aged 60, of acute pulmonary edema and coronary thrombosis.

De Vighne, Harry Carlos, Santa Barbara, Calif.; born Sept. 3, 1875; Hahnemann Medical College of the Pacific, San Francisco, 1904; in 1907 went to Juneau, Alaska; served as commissioner of health in Alaska Territory, as secretary of the Alaska State Board of Medical Examiners, and as secretary of the Alaska Territorial Medical Association; an associate member of the American Medical Association and in 1926 member of its House of Delegates; member of the American Academy of General Practice; veteran of World War I; for seven years chief surgeon of the Alaska Juneau Gold Mining Company; author of "Pole Star" and "The Time of My Life"; and "History of the Santa Barbara County Medical Society"; affiliated with St. Francis Hospital and Santa Barbara Cottage Hospital, where he was an honorary staff member; died in Santa Barbara General Hospital Aug. 7, aged 81, of acute cardiac decompensation and chronic cor pulmonale.

Morrish, Ray Sells ⊕ Flint, Mich.; born in Flint in 1888; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1912; fellow of the International College of Surgeons; past-president of the Michigan State Medical Society; past-president and secretary of the Genesee County Medical Society; past-president of the Flint Academy of Surgery; for many years on the board and served as president of the Genesee County Historical Society; served in civilian capacities during World War II; veteran of World War I; on the staffs of the Hurley and St. Joseph hospitals; formerly an acting assistant surgeon for the Veterans Administration; died in the McLaren General Hospital Aug. 13, aged 69.

Hetzel, Clarence Charles ⊕ Ogden, Utah; State University of Iowa College of Medicine, Iowa City, 1903; senior fellow of the American Academy of Ophthalmology and Otolaryngology; fellow of the Pan American Academy of Ophthalmology; veteran of World War I; since 1926 consultant and panel member, Bureau of Federal Employees, Civil Service, 1926-1927; active in founding and on the executive board of Ogden area council, Boy Scouts of America; original staff member of the Thomas Dee Memorial Hospital; for many years member of the Ogden Rotary Club and the Ogden Chamber of Commerce; died Aug. 7, aged 80, of coronary thrombosis.

Culligan, John Maurice ⊕ St. Paul; born in Yankton, S. D., Jan. 17, 1895; University of Minnesota Medical School, Minneapolis, 1921; clinical assistant professor of surgery at his alma mater; member of the American Urological Association; fellow of the American College of Surgeons; in 1921 entered the Mayo Foundation, Rochester, Minn., as a fellow in medicine and later transferred to urology; past-president of the Ramsey County Medical Society

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⊕ Indicates Member of the American Medical Association.

and St. Paul Surgical Society; associated with Ancker, Midway, Miller, and Children's hospitals and St. Joseph's Hospital, where he died Aug. 7, aged 62, of cerebral thrombosis.

Cave, Linus Samuel, Syracuse, N. Y.; Syracuse University College of Medicine, 1912; member of the Medical Society of the State of New York and the American Academy of Ophthalmology and Otolaryngology; clinical professor emeritus of otolaryngology at his alma mater; specialist certified by the American Board of Otolaryngology; on the staffs of the City Hospital, St. Joseph Hospital, Syracuse Memorial Hospital, and Syracuse Psychiatric Hospital; died in Otisco Lake, Aug. 10, aged 68, of ruptured abdominal aneurysm.

Clark, Lewis Duncan ⊕ Salem, Ore.; University of Oregon Medical School, Portland, 1937; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; interned at St. Luke's Hospital in Chicago; served a residency in pediatrics at the Children's Memorial Hospital in Cleveland and the University of Oregon Medical School Hospitals and Clinics in Portland; on the staffs of the Salem Memorial and Salem General hospitals; died while fishing in Yaquina Bay at Newport Aug. 10, aged 45, of heart disease.

Johnson, John Alexander ⊕ Olean, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York City, 1910; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; served in France during World War I; at various times health officer; appointed medical director of the public schools in Olean; affiliated with St. Francis Hospital and the Olean General Hospital, where he died Aug. 12, aged 71.

Allen, Ralph Fred ⊕ Coral Gables, Fla.; Tulane University School of Medicine, New Orleans, 1935; specialist certified by the American Board of Proctology; member of the American Proctologic Society and the Southeastern Surgical Congress; fellow of the International College of Surgeons; veteran of World War II; died in the Variety Children's Hospital Aug. 9, aged 46.

Amos, William Harold, Yonkers, N. Y.; Boston University School of Medicine, 1925; died in Valhalla Aug. 2, aged 58, of myocardial infarction.

Beck, Frederick George ⊕ New Haven, Conn.; Yale University School of Medicine, New Haven, 1903; served on the staffs of St. Raphael's Hospital; died in Gabriels, N. Y., Aug. 23, aged 82.

Brewster, Bert Marion ⊕ Jerseyville, Ill.; Washington University School of Medicine, St. Louis, 1905; past-president of the Jersey County Medical Society; Selective Service examiner for Jersey County during World War I and received a medal for his volunteer work; associated with St. Joseph Hospital and the Alton Memorial Hospital, in Alton, and the Jersey Community Hospital; died Aug. 21, aged 75.

Doyle, Joseph Lyman ⊕ Sigourney, Iowa; Creighton University School of Medicine, Omaha, 1928; veteran of World War II; on the staff of the Keokuk County Hospital, where he died Aug. 6, aged 53, of ventricular fibrillation.

Eaton, Adalieta Shaw, Winchester, N. H.; Boston University School of Medicine, 1908; practiced in Melrose, Mass.; at one time affiliated with the Massachusetts Memorial Hospitals in Boston; died in Keene Aug. 14, aged 72, of pneumonia.

Feldman, Samuel ⊕ Brooklyn; Universität Bern Medizinische Fakultät, Switzerland, 1935; associated with Jewish Chronic Disease Hospital and the Beth El Hospital, where he died Aug. 14, aged 47, of cerebral hemorrhage.

Geldert, Maurice Wesley Jr., New Orleans; Tulane University School of Medicine, New Orleans, 1943; interned at Southern Baptist Hospital, where he served a residency; served in the U. S. Naval Reserve; died May 10, aged 38, of a heart attack.

Hosman, Fred Leo, Indianapolis; University of Medicine, Indianapolis, 1898; veteran of World War I; died in the Veterans Administration Hospital Aug. 6, aged 80.

Jackson, Julien Dabney, Norfolk, Va.; Howard University College of Medicine, Washington, D. C., 1914; affiliated with the Norfolk Community Hospital, where he died Aug. 15, aged 67, of cerebral hemorrhage.

Kelley, Paul Joseph, Washington, D. C.; Georgetown University School of Medicine, Washington, 1938; veteran of World War II; on the courtesy staff of Providence Hospital, where he died Aug. 23, aged 48, of acute myocardial infarction.

La Rocca, Henry Andrew, New Orleans; Louisiana State University Medical Center, New Orleans, 1934; veteran of World War II; died at a fishing camp at Lake Washington near Port Sulphur Aug. 18, aged 48, of coronary thrombosis.

Mattox, Edgar Ellsworth, Pittsburgh; Maryland Medical College, Baltimore, 1912; an associate member of the American Medical Association; died in the Shadyside Hospital Aug. 15, aged 78, of arteriosclerotic cardiovascular renal disease with uremia, following a fractured hip as the result of a fall on the sidewalk.

Naughton, John Philip, Los Angeles; College of Physicians and Surgeons, Baltimore, 1896; an associate member of the American Medical Association; died Aug. 6, aged 89, of heart disease.

FOREIGN LETTERS

BRAZIL

Painless Childbirth.—Read's method and the psychoprophylactic method for painless childbirth have certain doctrinal differences but are similar in their aims. Dr. Francisco Cerruti (*Rev. gynec. e obst.* 50:745, 1956) found the results of both methods to be the same; 41% of his patients withstood childbirth well and gave birth with the use of only a local anesthetic in the perineum. If the patient, notwithstanding good cervical dilatation in the second stage of labor, showed marked signs of exhaustion, restlessness, and pain, after reasonable delay, he resorted to analgesia to spare her a greater psychic trauma. This group included 27% of his patients. Another 27% obtained some benefit and 5% no benefit from this procedure. Although analgesia was necessary in 45.4% of normal deliveries, the psychophysical preparation was useful, and all patients were enthusiastic, attributing their success to the preparation. Sedatives and antispasmodics must still be used to supplement psychophysical training, and, when properly used, greatly help the patient. Considering the rather high proportion of partial or total failures, the expression "childbirth without pain" is something of a misnomer and should not be used. "Psychophysical preparation" is a more exact term.

Leprosy and Tuberculosis.—According to Dr. R. D. Azulay (*Arquivos Mineiros de Leprologia*, vol. 16, 1956) there is an immunological interrelationship between leprosy and tuberculosis. BCG vaccination can change the lepromin reaction in man or animal. This vaccination helps lepers who show clinical, bacteriological and histopathological cure by converting the lepromin test from negative to positive, thus indicating an increase of resistance to the leprotic infection. BCG vaccination confers a partial immunity to Mycobacterium leprae murium infection in the white rat. By an injection of lepromin in guinea pigs, it is not possible to produce a sensitivity to a second inoculation of antigen. Dr. Azulay's results agree with those of N. S. Campos and J. Rosenberg (São Paulo).

Cancer of the Prostate.—At a meeting of the Brazilian College of Surgeons, Dr. Paulo Albuquerque of Rio de Janeiro reported a series of 100 patients with carcinoma of the prostate. The speaker advises frequent checkup in dealing with occult carcinoma of the prostate. In cases of operable carcinoma of the gland, he urges a radical perineal prostatectomy following the technique used at the Massachusetts General Hospital in Boston. In a case of carcinoma that is inoperable in the sense that radical removal of the cancer is impossible, he advocates orchiectomy and the giving of diethylstilbestrol as soon as the diagnosis is made and not waiting for the appearance of metastases.

CANADA

Blue Cross to Operate Government Hospital Insurance.—The director of the Blue Cross scheme and other Blue Cross personnel will administer the provincial hospital plan of the province of Ontario, which has 2,335,000 subscribers. In view of the work done by Blue Cross in the past decade, this would seem a logical and desirable step. The Ontario Hospital Association, which sponsors Blue Cross, decided that after the provincial plan becomes effective on Jan. 1, 1959, it will continue to function in the interests of all provincial hospitals and to operate a Blue Cross plan for hospital care on a supplementary basis. There will be no conflict, duplication, or overlapping between the provincial and the Blue Cross plans.

INDIA

Effect of Cyanocobalamin on Excretion of N_1-Methyl-Nicotinamide.—W. W. Altekar and co-workers (*J. Postgrad. Med.* 3:3 [July] 1957) stated that some workers have noticed in experiments on animals that an interrelationship exists between cyanocobalamin (vitamin B_{12}) and transmethylation reactions. In rats, it influences the excretion of certain substances containing methyl groups such as N_1-methyl-nicotinamide. The authors studied the effect of cyanocobalamin on the urinary excretion of certain metabolites containing a methyl group such as N_1-methyl-nicotinamide. The vitamin was given in different doses orally and intramuscularly, and 24 hour samples of urine were collected before and after its administration for the determination of the content of the nicotinamide. When the vitamin was given orally in doses of 50 to 200 mcg., there was no rise in the urinary excretion of N_1-methyl-nico-

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The items in these letters are contributed by regular correspondents in the various foreign countries.

inamide, probably due to the poor absorption of he vitamin. Small doses (50 to 100 mcg.) given ntramuscularly also failed to cause any increase in he urinary output of the metabolite, but when doses of 200 to 400 mcg. were given an increase in he excretion was seen which was, however, not significant. With a dose of 500 mcg. there was a marked ncrease in the urinary excretion of N_1-methyl- nicotinamide which was statistically significant.

Role of Adrenal Cortex in Liver Disease.—P. N. Wahi and co-workers (*J. Indian M. A.* 29:4 [Aug. 16] 1957) stated that several studies by others indicated that the adrenal cortex might be involved in the pathogenesis of various diseases, especially those of the liver, although its exact role is undetermined. The adrenal cortical hormones may exert a profound influence on the development of various morphologic abnormalities in the liver such as fatty liver, cirrhosis, and malignancy. The authors studied the role of adrenal cortex in experimental and human liver disease by using different tests. Some of the adrenal function tests carried out in this study were eosinophil response to corticotropin, urinary uric acid response to corticotropin, fluorescein-hyaluronidase skin-wheal test, blood cholesterol response to corticotropin, estimation of urinary corticosteroid concentrations, estimation of urinary 17-ketosteroid concentration, estimation of serum sodium level, and adrenal ascorbic acid depletion test. Simultaneously, the liver damage was assessed by the thymol turbidity test, thymol flocculation, zinc sulfate turbidity, colloidal gold flocculation, prothrombin concentration, total serum protein level, serum albumin level, total and direct bilirubin estimation, and serum cholinesterase determination in clinical cases. In experimental studies, cirrhosis was induced with carbon tetrachloride in young albino rats, while the clinical studies were made on patients with portal cirrhosis and infectious hepatitis. The diagnosis was established by clinical history, liver function tests, and sometimes by liver biopsy. The results suggest that there is adrenal deficiency in these disease states. Further work is, however, necessary to determine the functional status of the adrenal cortex in liver disease.

Fungistatic Activity of Aromatic Diamidines.—H. S. Andleigh (*J. Indian M. A.* 29:4 [Aug. 16] 1957) reported that earlier experiments for studying the antifungal activity of stilbamidine isethionate and pentamidine isethionate had given encouraging results. The author therefore studied the effect of other diamidines, concerning their antifungal activity, by noticing their effect on cultures of Madurella mycetomi isolated from local cases of maduromycosis of the black granule type. The diamidines tested in this study were hydroxystilbamidine isethionate and 4:4′-diamidinophenylamine dihydrochloride in addition to the two compounds studied earlier. The latter were included for comparison. Antifungal activity was measured by the "serial dilutions in liquid medium" method similar to that described by Bocobo and co-workers (1953). Both the newer compounds studied in this series were effective antifungal agents against the cultures studied. Hydroxystilbamidine isethionate is superior to pentamidine isethionate, while 4:4′-diamidinophenylamine is superior to both pentamidine and hydroxystilbamidine.

Industrial Diseases.—Of the workers in the pottery and ceramic industry, 60% showed evidence of tuberculosis, according to the report of a recent investigation conducted by the Organization of the Chief Adviser of Factories into the incidence of silicosis and tuberculosis among workers in the industry. The findings also revealed that 15.7% of the workers had roentgenographic evidence of silicosis and 6.3%, pulmonary tuberculosis. Earlier investigations carried out in other dusty industries also showed a high incidence of pulmonary tuberculosis among workers: mica mines 18.6%, silica brick manufacture, 7.1%; fireclay manufacture, 7.4%; and metal grinding, 9.0%. The shortage of building materials and the demand for crockery created by World War II resulted in the haphazard growth of the industry without adequate attention being paid to the design of factory buildings, layout, ventilation, safeguarding of machinery, and dust control. The report recommended a number of measures for controlling dust hazards, including separation of dusty and non-dusty processes, mechanical exhaust arrangements, wet grinding, use of protective equipment such as dust masks and respirators, periodical medical examination of workers, and improvement of general environmental sanitation.

ISRAEL

Prof. Herman Zondek.—On the occasion of Herman Zondek's 70th birthday, the Israel Medical Association held a scientific meeting, in Jerusalem, devoted to the problems of endocrinological research. E. Wertheimer of the Hebrew University Medical (discoverer of the bundle of His). In 1926, Zondek as investigator, teacher, author, and physician. In 1914 Zondek became attached to the famous "Charité" in Berlin which was then headed by W. His (discoverer of the bundle of His). In 1926, Zondek was appointed director of the Staedtische Krankenhaus am Urban, where he worked till 1933. After leaving Germany, he spent one year at the Physiobefore the full development of the signs of toxemia (edema, hypertension, and albuminuria) most patients had earlier in the pregnancy experienced a symptomatic stage characterized by relatively minor afflictions: headache in 48%, lethargy in 43%, visual aura in 37%, vertigo in 29%, nausea and vomiting in 16%, irritability in 14%, depression in 9%, and backache in 6%. Only 7% were free from these symptoms during a toxemic pregnancy. Of the 237 women, 92 (38.8%) had experienced both a normal and a toxemic pregnancy, and 72 or 78% of these contrasted the sense of well-being associated with a normal pregnancy with the malaise and minor symptoms characteristic of the toxemic condition.

Patients complaining of some of these symptoms were given a test dose of 100 mg. of progesterone in oil intramuscularly. If the symptoms were not relieved when the patient was seen two days later, it was assumed that they were unrelated to early toxemia. If relief was claimed, the patient continued to receive further doses, either daily or every other day. If the same benefit was achieved with smaller doses, the latter were given. This reduction in dosage was continued as long as the patient remained symptom-free. In many patients in whom treatment was started early in pregnancy, it was possible to discontinue it in the fourth or fifth month.

Between Jan. 1, 1951, and Sept. 30, 1956, there were 7,156 deliveries at the maternity hospital. Prior to the introduction of the experimental scheme in June, 1955, the quarterly incidence of toxemia had varied between 6.2% and 11%, giving an average of 9% for 5,307 deliveries. This incidence was similar to that for other maternity hospitals. The first progesterone-treated patients were delivered in September, 1955, and in the third quarter of 1955 the incidence of toxemia fell from 7.2% to 3.9%, with further declines in subsequent quarters to 2.5%, 1.9%, 1.0%, and 1.3%. Prior to the introduction of the scheme, there were 12 deliveries for every toxemic patient, whereas after its introduction there were 47.6 deliveries for every toxemic patient.

King Edward's Hospital Fund.—The *British Medical Journal* of Aug. 24, commenting on the annual report of the King Edward's Hospital Fund, says that no one reading this report could fail to see the continuing need in the National Health Service for voluntary contributions for hospitals. Hospital finances are uneasily balanced between urgent demands for economy in the spending of public money and a desire to give their patients the best care possible. The predicament is aggravated by the fact that the steady rise in salaries, wages, and prices has absorbed such increased funds as the hospitals have been granted since 1948. Many hospital buildings are old and suffer from a grime and dreariness in their general appearance that is out of place today. The fund recently allocated $700,000 to mental and mental deficiency hospitals, and much of this money has already been spent. The need for the modernization of mental hospitals has been much emphasized lately, but the report quite rightly notes that there is no general agreement yet on the ideal form of accommodation for the mentally ill.

One of the best-known departments of the fund is the Emergency Bed Service, but it has many other activities. It is investigating the problem of noise in hospitals; it has been primarily responsible for establishing 12 homes for the aged sick; and it has provided money for a cancer registry in the metropolitan area. The division of hospital facilities has been continuing its investigation of supplies, departmental costing, and electronic accounting for hospitals. The division of nursing maintains a staff college for matrons and another for ward sisters, and, apart from the work of the School of Hospital Catering, it has arranged refresher courses for those responsible for the domestic management of hospitals. The administrators of the fund are firm believers in investing in "people" as well as in "materials," and the Hospital Administrative Staff College is mainly concerned with selection and training for management. One extension of this work was the holding of a course for physician-superintendents of mental hospitals—the first assay of the fund in the field of postgraduate medical education. The hospitals of London are indeed fortunate that the fund has done so much to increase interest and enthusiasm for the never-ending task of improving hospital provision for the sick in all practicable ways.

Poliomyelitis Vaccine.—The summer epidemic of poliomyelitis in Great Britain has reached its peak. The number of cases in England and Wales so far this year exceeds 3,000. This is half as many again as the average number by this time of the year. Another batch of poliomyelitis vaccine of up to about 200,000 doses was tested and made available for distribution. The main centers of infection are now Maidstone and Lincoln. Each has had an incidence exceeding 100 per 100,000 of population. Because of these outbreaks, a camp for physically handicapped children that was to have been held by the Kent branch of the British Red Cross has been canceled. Planning for the camp has been going on for months. As a consolation prize, each child who would have gone to camp will now receive a toy. In addition, each will be taken on a seaside outing or to a party. The *Lancet* of Aug. 24 says there is no proof that swimming carries a special risk, but a distinguished sanitary engineer has said that he would not let his children bathe at a typical seaside resort.

Sir Charles Read.—Sir Charles Read, who died at the age of 54, was president of the Royal College of Obstetricians and Gynecologists from 1955 until his death and director of the Institute of Obstetrics and Gynecology. He was gynecologist and consultant to several prominent hospitals in the London area. He was born in New Zealand and educated at the University of Otago. In 1926, he was appointed house surgeon and resident surgical officer at the Chelsea Hospital for Women. Sir Charles, who was 6 ft. 4 in. tall, was one of the tallest men in the medical profession. In addition to his National Health Service practice, he had an extensive private practice in London. He was knighted in the last New Year Honors.

Dietary Changes.—According to a survey of food consumption and expenditure in Great Britain in 1955, the first full post-war year without rationing (Domestic Food Consumption and Expenditure, Her Majesty's Stationery Office, 1957), the increase in food purchased over the year was only 1% compared with 4% the previous year, showing that money, not governments, rations food purchases. The largest increase in any single kind of food was in meat, which was 6% above that of the previous year. There was a slight fall in the amount of bread consumed, and this, with the lower extraction rate of flour, resulted in a fall in the national intake of vitamin B. This intake is still within the minimum recommended by committee on nutrition of the British Medical Association. Fat consumption remained the same at 107 Gm. per person per day, and it still provided the same percentage of total calories in the diet (36.6%). Londoners paid less for their food than the average person. This is to be expected, as the big food markets are in the city. They also ate more meat, fish, fruit, and milk, but less bread.

CORRESPONDENCE

HOMOLOGOUS SERUM JAUNDICE

To the Editor:—The most characteristic differences between homologous serum jaundice and natural hepatitis are (1) that the former is transmitted by inoculation rather than through the gastrointestinal tract and (2) that the marked difference in incubation period, namely, from 60 to 180 days for the former, and only 15 to 30 days for the latter. It has generally been assumed that two different strains of virus are responsible for the two types of hepatitis, virus IH or A causing the natural disease and virus SH or B responsible for homologous serum jaundice. This interpretation fails to explain how homologous serum jaundice arose in the first place, and it leaves only a vague idea of what might happen were an individual who has just recovered from natural hepatitis used as a blood donor. The purpose of this communication is to suggest an alternative explanation.

According to the hypothesis which we wish to propose, the viral agent or agents causing homologous serum jaundice and natural hepatitis are the same. After an attack of natural hepatitis the individual becomes immune to the disease but may develop a carrier state. Presumably live virus particles remaining within the carrier's body become coated with specific antibody neutralizing their infectious properties. When blood containing such coated virus particles is transfused to a susceptible individual, the coated virus at first remains quiescent. However, since the antibody molecules have a half-life of approximately 30 to 35 days, over a period of a few months the antibody coating the virus particles gradually disappears until the virus regains its virulence (Weiner, A. S.: *J. Exper. Med.* 94:213-221 [Sept.] 1951. Wiener, A. S., and Gordon, E. B.: *Am. J. Clin. Path.* 23:429-446 [May] 1953). This would account for the prolonged incubation period characteristic of homologous serum jaundice. In natural hepatitis, on the other hand, the incubation period would be much shorter, since the virus particles are not coated with antibody which might diminish their infectiousness and virulence.

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MEDICAL FILM REVIEWS

The Meti-steroids in Rheumatoid Arthritis: 16 mm., color, sound, showing time 24 minutes. Prepared by Joseph Eidelsberg, M.D., New York; Abraham Kolodin, M.D., Montclair, N. J.; and Evelyn Merrick, M.D., Orange, N. J. Produced in 1956 by Sturgis Grant Productions, New York, for and procurable on loan from Schering Corporation, 60 Orange St., Blooomfield, N. J.

This film reviews the chemistry, physiology, and clinical application of the steroid hormones in the treatment of rheumatoid arthritis and other collagen diseases. It portrays the commonly accepted theories of adrenal corticosteroid therapy, and reflects most current knowledge of the subject. The film shows the technique for intra-articular injection in the treatment of rheumatoid arthritis; however, the shortcomings of these drugs are somewhat minimized. When conditions call for special caution, the injections should be done under surgical asepsis in a place where autoclaved instruments, thoroughly sterilized, are available. This film is a good review of the subject, valuable for general practitioners. The art work and the photography are excellent.

Replacement Tranfusion for the Treatment of Erythroblastosis Foetalis: 16 mm., color, sound, showing time 16 minutes. Prepared by Alice M. Goodfellow, M.D., and Eleanor M. Atkins, R.N., Toronto. Produced in 1956 by Mervin LaRue Inc., Chicago, for and procurable on loan from Baxter Laboratories, Inc., Morton Grove, Ill.

This film presents a detailed description of the technique of replacement transfusion. Emphasis is placed almost exclusively on the operative procedures, which are shown in clear detail. Included are some of the safety measures necessary for elimination of untoward side-effects, preoperative preparation of the infant, and some measures of postoperative care. The term "erythroblastosis foetalis" should preferably be replaced with the up-to-date and more descriptive name of the disease, "hemolytic disease of the newborn." While it is obviously necessary for a film of this nature to limit the topics covered, it is a rather regrettable omission that no reference is made to the techniques of replacement transfusion that must be employed when it cannot be carried out through the umbilical cord. This may even be the case in repeat transfusions, since they may have to be carried out when the infant is already too old for use of the umbilical route. The recommendation to remove 50 ml. of plasma from each 250-ml. bottle of blood appears somewhat too rigid. While the repeated emphasis on the danger of circulatory overload and the need for measuring the venous pressure is commendable, the routine use of a "20-ml. deficit," that is, to remove 20 ml. more blood from the infant than is injected, appears again too rigid. These criticisms do not detract from the didactic value of the film. The photography is excellent. The narration is clear and specific, and schematic drawings represent a helpful addition to the actual procedures shown. It is recommended for teaching purposes for medical students, nurses, residents, and all physicians who are confronted with the problems of treatment of hemolytic disease of the newborn.

Learning About Your Nose: 16 mm., color, sound, showing time 9 minutes. Collaborator: John J. Ballenger, Ph.D., Northwestern University. Produced in 1956 by and procurable on rental ($4) or purchase ($37.50) from Encyclopaedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill.

This film explains how the nose serves as a hallway between the changeable outside world and the sensitive breathing organs. Photomicrography, animation, and endoscopic photography are used to demonstrate the functions of the nose as a sterilizer, cleanser, air conditioner, and humidifier of the air we breathe. Suggestions are given that should lead children to better health habits. The film is quite correct factually and shows dramatically one of the most important lessons for a *child*—why he should avoid chills. It is recommended for junior and senior high school courses in health and biology and will be of interest to physicians who are asked to address such classes.

Grip on the Nation: 16 mm., black and white, sound, showing time 18 minutes. Produced by Gaumont Film Unit for the British Rheumatic Association. Procurable on loan from International Society for Welfare of Cripples, 701 First Ave., New York 17.

This film shows medical treatment and home care programs for adult patients with rheumatism. Provisional centers for patients in rural areas are highlighted. An immense variety of clever and extremely helpful devices for the activities of daily living are demonstrated. These can be used in the home —the kitchen, the bathroom, the bedroom, the stairways—to facilitate self-care in the arthritic, to lighten the burden on others about him, and especially to make sure that he does not follow a vicious circle of inactivity. This film will be especially helpful to public health nurses in areas where it is necessary to construct home devices for the disabled. The photography is good.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Perforation of Intraventricular Septum Due to Myocardial Infarction. E. R. Dorney, R. B. Logue and J. W. Hurst. J. M. A. Georgia 46:329-331 (July) 1957 [Atlanta].

All of the eight patients with a perforated intraventricular septum due to myocardial infarction diagnosed ante mortem and proved by autopsy developed a systolic murmur maximal in the 3rd and 4th left intercostal spaces within 8 days after their first episode of myocardial infarction. Half of the patients had an accompanying thrill and were hypertensive just prior to the septal rupture. Seven of the 8 were said to have had previous hypertension. Six of the 8 were given anticoagulant therapy, the prothrombin time of only 4 being ajudged to be within the therapeutic range. Differential diagnosis in the presence of a systolic murmur, heard with maximum intensity in the 3rd and 4th left intercostal spaces adjacent to the sternum, suggests rupture of a papillary muscle or of chorda tendinea and acquired mitral insufficiency due to left ventricular dilatation. Papillary muscle rupture is delineated on the basis of a murmur of lower pitch and lesser intensity heard at or near the apex, which may be either systolic or diastolic in time. Rupture of a chorda tendinea is differentiated on the basis of a musical systolic murmur heard best at the apex, while acquired mitral insufficiency due to left ventricular dilatation produces a systolic murmur loudest at the apex and transmitted toward the axilla.

Rupture has been found in a small series of patients to be equally prevalent in both the hypertensive and nonhypertensive states. The majority of cases of septal rupture following myocardial infarction occur in the 60 or over age group, in which there were 42 males and 23 females. The hypertension in the females (56%) exceeded that of the males (27%). No correlation is attempted between intraventricular septal rupture and the degree of physical activity at the time of rupture. It is of note—and is further attested to by the absence of old scars and myocardial fibrosis in hearts with septal rupture—that rupture is much more prevalent during the first myocardial infarction. Treatment of the immediate postrupture state is completely symptomatic, no regimen of treatment other than routine care of heart failure and shock being advocated. Patients surviving several weeks after rupture, the prognosis being generally poor, usually develop right-sided heart failure. Early digitalization and the use of mercurical diuretics is advocated.

Cardiac Asthma: Some Practical Clinical Observations. O. Swineford Jr., H. R. Pearsall and L. G. Gage. J. Allergy 28:354-364 (July) 1957 [St. Louis].

Paroxysmal dyspnea and cardiac asthma are not synonymous terms, although they are frequently used as such. Cardiac asthma means paroxysmal left heart failure with asthma, whereas paroxysmal dyspnea implies paroxysmal left heart failure without asthma. Differentiation between these 2 manifestations of left ventricular failure is of importance for the treatment. The records of 26 patients were analyzed for evidence of allergy, infection, heart disease, and results of therapy. On the basis of the data obtained, the authors formulate the following considerations for the cardiologist: 1. Treatment of heart failure may be all that is necessary, since heart failure may be the only important precipitating factor in the asthma. This was true in 6 of the 26 patients. 2. Rapid unexplained fluctuations in weight in older asthmatic patients suggest cardiac asthma, and they should be weighed regularly with this in mind. 3. Weight loss coincident with improvement, following digitalization or diuresis, confirms the suspicion of cardiac asthma. 4. Moist basal rales and x-ray evidence of pulmonary congestion during attacks of dyspnea with wheezing suggest cardiac asthma. 5. A significant fall in blood pressure, concomitant with relief of an attack, is strongly suggestive of cardiac asthma. 6. Cardiac asthma may occur before left ventricular failure is readily demonstrable. 7. Cardiac asthma occurs chiefly in those conditions which lead to left ventricular failure. Eleven of the 26 patients had arteriosclerotic heart disease and 15 had hypertensive and arteriosclerotic heart disease.

The allergist should remember the following points: 1. Cardiac asthma may be relieved temporarily by attention to allergic factors and by con-

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The place of publication of the periodicals appears in brackets preceding each abstract.

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ventional symptomatic asthma remedies. 2. Asthma may be precipitated, in a cardiac patient, by infection and may be relieved by antibiotics. The differentiation between infectious and cardiac asthma may be difficult. Both types of asthma should be suspected when older patients wheeze. 3. Asthma and heart disease may run their courses independently, neither seeming to influence the other. This is not cardiac asthma. 4. Asthma from other causes may precede cardiac asthma by many years. 5. Cardiac asthma is not always as severe and dramatic as in the classic description. 6. Asthma that persists after control of left ventricular failure is usually due to noncardiac causes. 7. Maximum improvement required combined cardiac and allergy management in 20 of the 26 patients. The authors feel that allergists have not emphasized the noncardiac aspects of the problem sufficiently and that cardiac asthma needs much more study.

Symptomatology and Pathophysiology of Atrial Septal Defect. H. Fellmann, F. Schaub, A. Bühlmann and A. O. Fleisch. Schweiz. med. Wchnschr. 87:775-781 (June 22) 1957 (In German) [Basel, Switzerland].

The authors report on 9 women and 8 men whose average age was 33 years with atrial septal defects. History revealed physical weakness and dyspnea on exertion. Complaints about extrasystoles or precordial distress were of secondary importance. Three patients were asymptomatic. On roentgenologic examination the heart always showed a prominent pulmonary artery and an enlarged right atrium. In most patients, the right ventricle also was large. "Hilar dance" and increased pulsations of the pulmonary vessels were observed in 12 patients and a hypoplastic aorta in 8. No radiologic abnormalities, except for a slightly prominent pulmonary artery, were observed in 1 patient. A systolic murmur was revealed by auscultation and phonocardiograms in all of the patients, and in 14 there was a diastolic murmur and an accentuated and split second pulmonic sound. The electrocardiographic tracing was normal in 2 patients. A total atrioventricular block was revealed by the electrocardiogram in 1 patient. An incomplete or complete right bundle-branch block was present in 12 patients and hypertrophy of the right ventricle in 7. The occurrence of the hypertrophy showed a certain dependence on the intrapulmonary pressure. Hemodynamic changes consisted of an increased pulmonary minute volume caused by the additional left-to-right shunt in the presence of an unchanged or slightly diminished peripheral minute volume.

To confirm the diagnosis of atrial septal defect a direct catheterization of the defect was required as well as a difference of 2.5 vol.% in oxygen saturation of the blood between the right atrium and the venae cavae. Diagnostic errors will occur less frequently if as many blood samples as is possible are obtained from one cavity of the heart. Significant complications are pulmonary hypertension, late cyanosis, and right and left ventricular failure. As a rule, pulmonary hypertension is a late complication. Pronounced increase in pressure is associated with increased resistance in the pulmonary circulation. In most patients, this increased resistance is the result of anatomic changes in the small pulmonary vessels (secondary pulmonary sclerosis) due to a long-continued extra load by an increased pulmonary minute volume. The right ventricular output in right ventricular failure is diminished, and the chamber is dilated by the blood which remains after the systole. In patients with more severe decompensation of the right side of the heart a reversal of the shunt may occur, with peripheral cyanosis.

For the purpose of differential diagnosis, pulmonary veins with an abnormal drainage into the right atrium can only be ruled out by direct catheterization. These 2 anomalies are frequently combined. Left ventricular hypertrophy and the absence of a diastolic murmur may be of aid in the often difficult differentiation from a ventricular septal defect. The differential diagnosis from persistent ductus arteriosus may present difficulties only in patients with severe pulmonary hypertension. The prognosis of the atrial septal defect depends on the size of the defect. As a rule, the previously mentioned complications occur in the 3rd or 4th decade of life, causing progressive deterioration leading to death.

The Treatment of Emphysema. H. L. Israel. M. Ann. District of Columbia 26:345-348 (July) 1957 [Washington, D. C.].

The increased ratio of residual to total lung capacity reported some years ago to be the most accurate indication of emphysema is found to be as abnormal in the asymptomatic patient with senile emphysema as in the disabled patient with obstructive emphysema. The two major physiological defects in advanced emphysema are those of ventilation and diffusion, the one reflecting bronchial obstruction and lost elasticity and the other, stretched or torn alveolar septums and an obliterated vascular bed. These disturbances are responsible for the conflicting estimates of severity by clinicians, whose evaluation is based on the extent of airway obstruction, and by pathologists, whose evaluation is based on the extent of disintegration of alveolar walls. The relatively crude and subjective measure of maximal breathing capacity is the best measure of the severity of emphysema. Exertion on breathing is still the best index of the extent of emphysema. The dyspneic patient is easily recognized as being emphysematous by a slightly cyanotic appearance, barrel chest, an onset of breathlessness after the age of 40, constant and progressive symptomatology, diminished breath sounds on auscultation, and the possible presence of rales. Differential diagnosis to exclude complications of emphysema, such as pneumothorax and pneumonia and other causes, is aided by roentgenographic studies, which further demonstrate impairment of the diaphragmatic motion.

The physiological disturbances toward which therapy is directed include infection, bronchospasm, viscid secretions, anoxemia, pulmonary hypertension, and congestive failure. The results of therapy in emphysema are somewhat less than dramatic in that disrupted alveoli, loss of elasticity, and an obliterated vascular bed are little amenable to therapy. The therapeutic treatment of chronic emphysema is important because even slight improvement in respiratory function in a patient with advanced emphysema may be the difference between invalidism and employability. The treatment is directed at infection, bronchospasm, improvement of diaphragmatic efficiency, tenacious secretions, anoxia, lessening tissue needs for oxygen, congestive failure, polycythemia, and acidosis. Surgical treatment of generalized emphysema is not too promising save for patients with localized bullae. Vigorous therapy in the form of antibiotics, bronchodilators, and oxygen by mechanical respirators is indicated in episodes of acute respiratory acidosis, in which state tissue utilization of oxygen is dangerously involved. Associated congestive heart failure necessitates rapid digitalization, venesection, and the use of diuretics.

Familial Paroxysmal Paralytic Myoglobinuria. T. E. Fitz. West Virginia M. J. 53:264-270 (July) 1957 [Charleston].

The history of 3 patients with paroxysmal paralytic myoglobinuria were added to the 24 reported on in the literature. Spontaneous myoglobinuria in man is quite similar to that occurring in horses. The characteristic symptoms of the disease were an acute onset of muscle pain with varying degrees of muscle involvement and paralysis. Fever was usually present. The feet were frequently in an equinus position. Dark reddish-brown urine was the most common sign and, where spectroscopy was available, analysis revealed the presence of myoglobinuria. The clinical course of the disease, however, was adequate to establish the diagnosis of paroxysmal myoglobinuria. Recovery was usual, but there have been enough patients reported on whose autopsy revealed that the precipitating cause of death appeared to be due to renal involvement either as a hydropic degeneration of the tubular cells or an excessive number of precipitated casts in the tubules. The muscles revealed Zenker's degeneration. The etiology of the disease is unknown, but its relationship to abnormal carbohydrate metabolism, prophyria, and progressive muscular dystrophy is pointed out. The familial incidence has been noted in about a half of the patients reported on. The disease may be more common than these few cases would indicate.

Eosinophilic Infiltration of Stomach and Small Intestine. T. Ferrier and N. Davis. M. J. Australia 1:789-791 (June 8) 1957 [Sydney].

Eosinophilic infiltration of the stomach and small intestine has been described only during the last 2 decades, and only 20 cases have been reported. The authors describe a new case. Literature reports indicate that the condition appears in 2 forms. The more commonly reported form occurs as a diffuse thickening of the wall of the stomach, with or without involvement of the duodenum or the upper part of the jejunum. The thickening in the stomach becomes more pronounced towards the pylorus, where it often produces stenosis. The thickened, rigid duodenum and jejunum may suggest regional ileitis. Less commonly the condition takes the form of a localized granuloma, usually in the pyloric region. It occurs generally as a polypoid tumor-like mass which can give rise to intestinal obstruction. It is easily mistaken for carcinoma. Allergy has been invoked as an etiological factor in view of the eosinophilia. However, in less than 20% of the diffuse lesions and in none of the cases of localized granuloma has there been demonstrated a relationship between an allergen and the symptoms.

The case described was one of diffuse eosinophilic infiltration of the stomach and the upper part of the intestine. At the age of 12 this patient had begun to experience recurrent bouts of periumbilical colicky pain. A laparotomy at the age of 18 disclosed gross thickening of the jejunum resembling that seen in Crohn's disease. The appendix was removed, and a biopsy was taken of the wall of the jejunum. The pathologist suggested eosinophilic leukemia, tropical eosinophilia, or eosinophilic granuloma. Another laparotomy, carried out several years later, revealed that the intestinal wall was much less thickened than at the operation 6 years previously. Enlarged fleshy lymph nodes were seen in the mesentery, and these decreased in size as the ileum was approached. There was thickening of the pylorus, which felt almost cartilaginous in consistency. An enlarged mesenteric lymph node was removed for biopsy. Microscopic examination of the lymph node showed hyperplasia of the reticuloendothelial cells of the sinusoids. There were large numbers of eosinophilic leukocytes in the sinusoids, and smaller numbers of eosinophils were found in the medulla. Later the patient was treated effectively with corticotropin. The authors believe that the second laparotomy could have been avoided, if they had known more about the condition. If a diagnosis of eosinophilic infiltration of the stomach or small intestine is suspected, corticotropin is worth a trial and may prove to be the most effective treatment. Laparotomy will often be necessary to confirm the diagnosis or to relieve complications. If pyloric obstruction exists, a gastrojejunostomy would be justified. Lesions indistinguishable from carcinoma would have to be dealt with by resection unless examination of a frozen section established the diagnosis.

Dermatomyositis: A Review of 19 Cases in Adolescents and Children. M. A. Everett and A. C. Curtis. A. M. A. Arch. Int. Med. 100:70-76 (July) 1957 [Chicago].

The authors report on 7 boys and 12 girls, between the ages of 4 months and 17 years, with dermatomyositis. The follow-up period varied from 2 to 19 years. The initial symptom of the disease consisted of facial erythema in 6. The onset was characterized by fatigue in 4 and by specific muscle weakness in 3; 6 had miscellaneous symptoms. Temperature greater than 100.5 F (38 C) was not seen except in the presence of an infection. Demonstrable generalized muscular weakness, arthritis, or arthralgia were notable by their absence. None of the children or adolescents had a malignant growth. With the exception of increased urinary creatine, the laboratory findings were not remarkable. The erythrocyte sedimentation rate was increased in 7 of the 19 patients. Biopsy specimens from 17 patients revealed skeletal muscle changes which tended to be focal and inflammatory, proceeding to necrosis, fibrosis, and often calcification; they were unaccompanied by vasculitis.

Eleven patients died and 8 are living. Four of the 11 died within 1 year because of hypopharyngeal paralysis and/or cardiac involvement. The others died of infectious processes, chiefly of pneumonia. Postmortem studies in 6 patients revealed pathological involvement of cardiac and/or pharyngeal muscles similar to that described in the skeletal muscle. Of the 8 patients who survived, 4 are completely active and have either only minimal to moderate fibrosis about some joints or insignificant residual pigmentary changes. One has residual calcinosis about some of the joints. The other 4 patients all had severe calcinosis, and 2 of them are now partially active and the other 2 are confined to bed because of contractures and fibrosis of the extremities. Specific therapy included administration of *p*-aminobenzoic acid, corticotropin, cortisone and its derivatives, and vitamin E. A beneficial effect of *p*-aminobenzoic acid was not observed. Corticotropin and/or cortisone derivatives provided a feeling of well-being and suppressed inflammatory signs in some patients, but these drugs did not alter the basic course or outcome of the disease. Small doses of vitamin E likewise failed. All patients who did not die early in the course of the disease had physical therapy, including exercise, heat, and splinting, which played a major part in the prevention of crippling deformities.

Dermatomyositis is a clinical entity which obtains its integrity from its unique clinical picture and rather typical course, eventuating in death, arrest, or recovery usually within 3 to 36 months. Although the histopathological features are frequently not diagnostic, the prominence of atrophy, necrosis, homogenization, and degeneration of skeletal muscle fibers is suggestive, particularly when accompanied by moderate inflammatory changes. The absence of necrotic, proliferative, or occlusive changes in the vascular walls and the absence of a positive L. E.-cell phenomenon is a persistent observation in the major reported series of dermatomyositis. The causation is unknown.

Treatment of Arterial Hypertension with Ganglion-Blocking Agents: Clinical and Experimental Study. V. Rønnov-Jessen. Bibl. læger 149:91-180 (No. 3-4) 1957 (In Danish) [Copenhagen].

The development of the bisquaternary ganglion blocking ammonium compounds is reviewed with special attention to preparations used in the treatment of hypertension. The susceptibility to these ganglion blocking agents varies in individuals. Continuous treatment with hexamethonium and pentolinium usually results in considerable tolerance, so that after some weeks the effective dose will often be from 5 to 10 times higher than at the start of treatment. Of 96 patients, aged from 20 to 77, about two-thirds of them women, almost all with severe hypertension, 28 received hexamethonium at the beginning and the others, pentolinium. In most cases treatment with hexamethonium was superseded by pentolinium treatment. In 16 cases treatment was supplemented with reserpine. Eighty-four patients were treated for from 5 to 49 months. No convincing difference was seen between the effect of hexamethonium and pentolinium on the subjective symptoms. Rapid improvement in the subjective hypertensive symptoms occurred and at the same time some reduction of the blood pressure, and sometimes also improvement in other objective symptoms. The general health improved. The working capacity was increased in two-thirds of the patients treated for more than 5 months. The effect of the agents does not disappear on prolonged application.

On the last observation 69 patients were under treatment and had been treated for at least 5 months. Sixteen patients had died, 9 during treatment, 7 after the termination of the treatment; the causes of death were the usual causes of hypertensive circulatory diseases. Treatment with hexamethonium and pentolinium is in many cases associated with disturbing side-effects, which, however, as a rule decrease in the course of continued treatment. A certain risk of grave complications can usually be prevented by careful dosage, slow increase of the doses, and careful instruction of the patient. Satisfactory results call for cooperation between physician and patient. The effect of the treatment on the prognosis for life is not certain. The time of survival can be lengthened in patients with malignant hypertension with papilledema. With regard to combined treatment of hypertension, reserpine plus pentolinium seems to be the most effective. At present, application of ganglion blocking agents is to be regarded as one of the best methods of treatment of severe hypertension.

Cogan's Syndrome Associated with Polyarteritis Nodosa: A Report of Three Cases. W. J. Crawford. Pennsylvania M. J. 60:835-838 (July) 1957 [Harrisburg].

A syndrome of nonsyphilitic interstitial keratitis and vestibuloauditory symptoms associated with vertigo, nystagmus, tinnitus, and usually complete deafness is referred to as Cogan's syndrome. This syndrome is first noticeable with the bilateral appearance of a patchy, granular type of infiltrate situated predominantly in the posterior half of the cornea, which becomes vascularized later in the course of the disease. Auditory symptoms may precede but usually follow the ocular symptoms. Mild leukocytosis and occasional eosinophilia are the only indications of a systemic disease, supposed to be intimately associated with Cogan's syndrome, the origin of which was heretofore believed to be allergic, infectious, or vasomotor in nature. Two of the 3 patients reported developed systemic polyarteritis nodosa, the 3rd patient showing signs of a systemic disease of the collagen variety. These findings lend credence to the idea that Cogan's syndrome is an early localized manifestation of polyarteritis nodosa capable of an acute fatal or chronic course.

ACTH and Cortisone in Trichinosis. G. L. Brinkman and L. Koos. J. Michigan M. Soc. 56:867-870 (July) 1957 [St. Paul, Minn.].

Treatment with corticotropin and cortisone has greatly altered the picture of trichinosis. It is now possible to obtain complete symptomatic relief within 48 hours, and no deaths have been reported in patients receiving steroid therapy. Although these drugs have been available for 8 years, the American and Canadian literature report only 17 and the foreign literature only 12 patients in whom trichinosis was treated with corticotropin and cortisone. Dramatic response was obtained in all of the patients. The 3 new cases presented here concern a Hungarian man, his wife, and their 15-year-old son. The diagnosis was first suspected because the authors were aware of the fact that Hungarians eat uncooked meat. Muscle biopsy in the father confirmed the diagnosis, and mother and son had eaten the same uncooked bacon. All 3 patients were treated with Acthar gel and responded favorably.

The steroid hormones have no parasiticidal effect, and the mode of action is still undecided. Most observers agree that the symptoms and signs of this infection represent an allergic response on the part of the host and that these drugs merely modify this reaction. A further reason for using corticotropin and cortisone is that it probably protects the patient against the serious complication of myocarditis, which is the commonest cause of death in these patients. Although the larvae invade the myocardium, encystment does not normally take place. Areas of focal necrosis and inflammation occur, often proceeding to fatty degeneration, with death from myocardial failure resulting between the 4th to 8th week of the illness. There is considerable justification for maintaining therapy until the danger of myocarditis is past, and, for this reason, 6 weeks would appear to be a minimum period during which these drugs should be given.

Death Rate in Diabetics. P. Montenero and A. Colletti. Minerva med. 48:2083-2087 (June 16) 1957 (In Italian) [Turin, Italy].

The authors studied the medical histories of 467 diabetic patients who died in a large hospital in Rome between 1921 and 1955; 2,498 diabetic patients were admitted to the same hospital during the same period. Two hundred forty-five of the 467 patients were male and 222 were female. The study showed that the death rate has diminished markedly during the last 10 years; 12.8% of the patients died in the period 1951-1955 and 24.8% in the period 1921-1925. The death rate of men was higher than that of women; this difference has disappeared since 1945. The average age at the time of death has increased steadily: it was 56.2 years in the period 1951-1955. The use of insulin has advanced the life expectancy from 4.1 years in 1921-1925 to 9.3 years in 1951-1955. Coma was the most frequent cause of death before 1940; since then 50% of the diabetic patients died of vascular disease and only 24.3% died of coma.

SURGERY

Paradoxical Hypertension Following Resection of Coarctation of Aorta. W. C. Sealy, J. S. Harris, W. G. Young and H. A. Callaway. Surgery 42:135-147 (July) 1957 [St. Louis].

Significant hypertension was found to have occurred in 2 separate unrelated periods after repair of coarctation of the aorta. In this study the first or immediate type of hypertension was based on the following criteria: (1) the hypertension is limited to the first 36 hours postoperatively, (2) the arm systolic level is greater than the maximum preoperative levels, and (3) there is an increase in the popliteal artery blood pressure, excluding the possibility of recurrent aortic obstruction. The criteria for the second or delayed type of hypertension are as follows: (1) it begins after the second postoperative day and subsides in 7 to 14 days, (2) the systolic and diastolic or diastolic elevations are greater than levels just after the operation, and (3) there is an increase in the popliteal artery pressure. Of the 30 patients with postoperative blood pressure studies considered adequate for review, 7 had an increase in blood pressure over the preoperative level within 36 hours, 14 exhibited the second or delayed type of hypertension (one patient demonstrating both the immediate and the delayed type), and 10 did not develop postoperative hypertension. With one exception popliteal artery pressure also increased above preoperative levels, ruling out the recurrence of aortic obstruction. Of particular interest was the occurrence of abdominal pain in 5 of the 6 patients with serious associated anomalies in the delayed hypertension group, hypertension persisting for the longest duration in one of the patients who developed necrosis of the intestine. This abdominal pain was generalized, intermittent, and cramping and was associated with anorexia, nausea, and vomiting. Instances of leukocytosis, a moderately distended abdomen with indefinite and poorly localized tenderness, peristaltic sounds, segmental dilatation and gas retention, and easily film-visible edema are likewise associated with this abdominal pain. Abdominal exploration in 2 instances revealed segmental areas of necrosis of the intestinal wall so extensive in one that nearly all of the ileum was damaged. Reduction of the hypertension by the sympathicolytic drug hydralazine hydrochloride was followed by relief of the abdominal pain and by eventual recovery in 2 other instances.

The immediate or first type of hypertension is postulated as being due to a disturbance in the baroreceptor mechanisms of the aorta and the carotid arteries. The second or delayed type is more important and is in all likelihood the initial step in the chain of events progressing from vascular spasm to vascular degeneration and death from the effects of tissue necrosis in the intestinal tract. The outstanding pathological features of the advanced vascular lesions are the localization of these changes to vessels originating below the level of coarctation, the close similarity of the vascular changes to those found in renal hypertension, and a predisposition for the vessels of the small intestine. Three theories are projected as plausible explanations for the unusual paradoxical hypertension: the presence of emboli to the kidneys with the production of chronic renal hypertension; increased blood flow to the adrenals followed by increased epinephrine and norepinephrine secretion, producing vascular spasm; and the sudden release of the aortic obstruction followed by a considerable increase in the systolic pressure in the lower half of the body leading to vascular spasm.

Aorticopulmonary Septal Defect: Diagnosis and Surgical Treatment. D. A. Cooley, D. G. McNamara and J. R. Latson. Surgery 42:101-120 (July) 1957 [St. Louis].

A defect of the aortic septum is a congenital anomaly resulting in free communication between the ascending aorta and the adjacent main pulmonary artery, producing serious physiological disturbances and providing a challenge in both clinical diagnosis and surgical repair. This defect ensues if there is interference with or interruption of fusion of the septa or if the heart rotates incompletely or not at all. Three types of embryologic defect may result from disorders in this area: interventricular septal defect, persistent truncus arteriosus, and aorticopulmonary defect. Differential diagnosis is difficult because of similar physiological effects and the proximity of anatomic locations. Not one antemortem clinical diagnosis of the condition was made prior to 1949. The defect may be relatively small (less than 1 cm.) or it can measure as much as 2 to 6 cm. Cardiac enlargement is uniformly present, physical retardation is common, and deformation of the anterior chest wall occurs frequently. Wide pulse pressure and a variety of murmurs, ranging from a loud continuous machinery murmur to a soft systolic murmur, and often no murmur at all, are of some diagnostic significance. Roentgenograms and fluoroscopy reveal cardiac enlargement, increased pulmonary vascularity, and striking dilatation of the main pulmonary trunk, while electrocardiograms indicate a left or a combined left and right ventricular hypertrophy if pulmonary hypertension is present. Cardiac catheterization may be the only means of making a definitive diagnosis in this anomaly, the course that the catheter takes being important in distinguishing aorticopulmonary defect, where the catheter passes from the pulmonary artery and ascends into the innominate artery, and a patent ductus arteriosus, where the catheter readily enters the descending thoracic aorta rather than the aortic arch. Dye studies using Evans blue or methylene blue dye are useful in confirming catheter findings, especially when the aorta cannot be catheterized from the pulmonary artery. Retrograde aortography is mentioned as perhaps the most important diagnostic aid for aorticopulmonary defect alone. The above defect is differentiated from a persistent truncus arteriosus in which the enlarged semilunar valve sinuses of the common outlet valve are outlined. Surgical repair of the defect encounters no fewer problems than those to be found in clinical diagnosis and is hindered by hemorrhage from the posterior side of the defect, by the fact that the defect represents not a ductal remnant but a failure of development of a septum between 2 large and relatively high-pressure vessels, by pulmonary hypertension, and by thinness of the posterior wall of the fistula due to aneurysmal dilatation. Three cases of aorticopulmonary defect are described with successful repair using general body hypothermia in one patient and temporary cardiopulmonary bypass with 2 patients. Induced cardiac arrest with cardiopulmonary bypass seems to provide optimum conditions for the surgical repair of this defect.

PEDIATRICS

Infantile Amaurotic Family Idiocy: A Genetic Approach. P. J. Kozinn, H. Wiener and P. Cohen. J. Pediat. 51:58-64 (July) 1957 [St. Louis].

Infantile amaurotic familial idiocy, or Tay-Sachs disease, is a genetically determined degenerative disorder of the central nervous system. During a 12-year period, 58 deaths from infantile amaurotic familial idiocy were reported in New York City. The yearly incidence of the disease, in new cases per total births, is 1 per 8,300 for Jews and 1 per 450,000 for non-Jews. The average life span in this disease is 27 months, and there is no sex predilection. The earliest symptoms of infantile amaurotic familial idiocy were auditory or visual. The former consisted of hyperacusis and the latter of squinting, crossing, and wandering motions of the eyes. Occasionally, marked tremors of the extremities and face were noted and tetany was suspected. The symptoms that usually first bring forth the parents' concern are sluggishness and lack of attentiveness. The infant makes little progress and subsequently loses the achievements previously acquired. Ophthalmoscopic examination reveals the most characteristic feature of this disease—a bright cherry-red spot in the center of a white area, occupying the area of the macula lutea.

Pathologically, infantile amaurotic familial idiocy is characterized by abnormal cellular lipids in ganglion cells throughout the central nervous system. In the retina, the changes are limited to the nerve cell layer, with thinning-out in the region of the macula and the appearance of phagocyte-like cells loaded with lipoid materials. The histological lesions emerge in the neurons of the cerebrum, cerebellum, medulla, spinal cord, and autonomic ganglions and begin, as in the macula, with swelling of the cell body, disintegration of the tigroid substance, and simultaneous appearance of fatty substances. The accumulated fatty substances have recently been demonstrated to represent a new group of lipids, called gangliosides, differing from other cerebrosides by the presence of neuraminic acid. These lipids normally make up 0.3% of the solids in the infant's brain, while in this illness they rise in concentration to 4 to 8%, partially replacing the cerebrosides. In view of these findings, the basic defect in infantile amaurotic idiocy has been postulated as a developmental failure in a specific enzyme system, leading to the progressive accumulation of an abnormal by-product of intermediate lipid metabolism. The gross autopsy findings have been shown to be roughly correlated with duration of the illness. There is central nervous system atrophy during the first year, patchy encephalomalacia and meningeal fibrosis during the second, and hydrocephalus thereafter.

Infantile amaurotic idiocy is transmitted as a recessive trait. The frequency of persons carrying a gene specific for this disease, without presently demonstrable alteration in their physical make-up, is estimated as 1 in 50 for Jews and 1 in 300 for non-Jews. Once a child is born with infantile amaurotic idiocy, the chance of each subsequent sibling having the disease is 25%. Sterilization or contraception may be acceptable solutions to some parents. Others may be strongly desirous of having further children if the risk of recurrence can be minimized. Artificial insemination offers such an approach. Selection of a non-Jewish donor, or a Jew of Sefardic ancestry, for artificial insemination markedly reduces the possibility of further siblings with Tay-Sachs disease. Siblings and cousins of infants with amaurotic familial idiocy should exercise caution in selection of marriage partners.

Treatment of Acute Purulent Meningitis with Tetracycline. R. Koch and H. Hansen. J. Pediat. 51:65-73 (July) 1957 [St. Louis].

Tetracycline alone was used to treat 19 patients with purulent meningitis and was found effective in all but 1 patient. The over-all result was 18 recoveries and 1 death. Among the 18 who recovered, 1 patient required additional antibiotics and 4 suffered complications: 2 had subdural effusion and in 2 micrococcic infection developed. The death occurred in a 2-month-old male infant with congenital hydrocephalus. Local inflammatory changes at the site of intravenous injections of tetracycline occurred regularly with the dosage used. In 2 patients areas of necrosis and sloughing developed due to the infiltration of the drug into surrounding subcutaneous tissue. The intramuscular administration of tetracycline caused pain at the site of injection, and abscesses developed in the buttocks of 3 of the 19 children.

Multiple determinations of serum and cerebrospinal fluid concentrations demonstrated that tetracycline readily crosses the blood-brain barrier in therapeutic concentrations in patients with acute purulent meningitis. The dosage of 75 mg. per kilogram of body weight per day of tetracycline given intravenously or intramuscularly produces

The bibliography is extensive, and there is a good index. This book can be read profitably by any physician, but particularly by the internist and cardiologist.

Obesity: Its Cause, Classification, and Care. By E. Philip Gelvin, M.D., F.A.C.P., Associate in Medicine, New York Medical College, Flower and Fifth Avenue Hospital, New York, and Thomas H. McGavack, M.D., F.A.C.P., Professor of Clinical Medicine, New York Medical College, Flower and Fifth Avenue Hospital. Cloth. $3.50. Pp. 146. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1957.

The medical profession has wholeheartedly endorsed the need to treat obesity for the improvement of health. The treatment of overweight has, however, occupied a position of low prestige, induced in part, perhaps, by the activities of nonscientific groups and individuals and the consequent reluctance of physicians to become identified with them. The publication of this volume is a worthy attempt to demonstrate that management of obesity is an intricate medical problem, which deserves our serious attention. The authors discuss simply but adequately the various factors involved: nutritional, metabolic, endocrine, neurological, and psychological. They indicate also the many difficulties encountered in the handling of the patient. Perhaps the psychological factors involved in the resistance to therapy could stand elaboration. The material in this volume is based on a long, intimate experience with obese patients. The presentation is a well-balanced and sympathetic approach to a frequently difficult problem involving a powerful instinct, the urge to eat.

Kaposi's Sarcoma: Multiple Idiopathic Hemorrhagic Sarcoma. By Samuel M. Bluefarb, B.S., M.D., F.A.C.P., Associate Professor of Dermatology, Northwestern University Medical School, Chicago. Publication number 308, American Lecture Series, monograph in Bannerstone Division of American Lectures in Dermatology. Edited by Arthur C. Curtis, M.D., Chairman, Department of Dermatology and Syphilology, University of Michigan Medical School, Ann Arbor. Cloth. $5.50. Pp. 171, with 67 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1957.

This monograph is the initial publication in a series of studies on cutaneous manifestations of diseases of the reticuloendothelial system. Accordingly, the principal portion of the text is devoted to the cutaneous manifestations of multiple idiopathic hemorrhagic sarcoma, although other facets of the disease are also discussed. These include etiology, pathology, symptomatology, differential diagnosis, and therapy. The book is well written, in a manner that reflects a great deal of study and a wide experience in the field. The material is presented in a simple and logical sequence. As Dr. Herbert Rattner notes in his introduction, it is not important that the author is unable to ascribe the disease to a single cause, or that his discussion of treatment ends on a depressing note; but the value of the book lies in the fact that all the available facts on Kaposi's sarcoma are here recorded. The volume is well documented and well indexed. Remarkably thorough and systematic in the coverage of the literature, well printed on good paper, and amply supplied with original photographs, this is a work which is at once useful and readable. This book is highly recommended as an authoritative source of reference on a disease with many obscure and diverse manifestations.

Modern Therapy in Neurology. Edited by Francis M. Forster, M.D., Dean and Professor of Neurology, Georgetown University School of Medicine, Washington, D. C. With foreword by H. Houston Merritt, M.D., Professor of Neurology, College of Physicians and Surgeons, Columbia University, New York. Cloth. $12. Pp. 792, with illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1957.

This book presents clinical discussions by 22 contributors (including the editor). The contents are arranged in 18 chapters, 16 of which deal with particular nervous diseases, their symptoms and treatment. The penultimate chapter is devoted to a discussion of the role of rehabilitation, while the last chapter deals with the use of tranquilizing drugs. The book is intended to emphasize the improved therapeutic outlook in the field of medical neurology even though adequate therapy is still not available for many diseases of the nervous system. Descriptive and diagnostic material is included for clarification, but this appears in smaller type than the main text. A list of references annotated in the text is included at the end of each chapter, and a general index is provided at the end of the book. The discussions of therapy are for the most part critical as well as constructive. The chapter on tranquilizing agents includes a discussion of most of the drugs which have been numbered in this rather vague and poorly defined group. In some instances the author shows a preference for proprietary rather than nonproprietary names for drugs. The text appears to be carefully edited and reasonably free from typographic error. Physicians as well as medical students who desire to have a convenient reference to current therapy of nervous disorders should find this book useful and interesting.

QUERIES AND MINOR NOTES

PHYLAXIS AGAINST TICK BITES

HE EDITOR:—*Information is requested concerning ophylactic and therapeutic measures for persons ing in areas where ticks are abundant. What are : best means of protection when one is out-of- ors in a tick-infested area? Are there effective nodorous preparations available for prophylactic plication to the skin? What is the best means of noving a partially imbedded tick from the skin, d what treatment is advisable after removal of the k? Would use of a spray be feasible in eliminat- ; ticks from the area? Are horses and dogs subject injury or disease from tick infestation? Are there lividual variations in human susceptibility to at- ck by ticks?* *M.D., Arkansas.*

ISWER.—Ticks do not attach to the skin immedi- after contact is made. They usually wander nd for an hour or more hunting for a suitable : to feed, where they will not be disturbed for ral days. In addition, there is a delay of a few s after the tick attaches before it can transmit the ettsiae. A combination of the time consumed while tick is searching for a feeding site and the delay re the tick will transmit the infection may amount x or more hours. From this it is apparent that one ie best methods to prevent infestation by ticks is orough examination of the naked body immedi- after coming in from the field—between the is, the anal region, the armpits, the scalp, and cularly behind the ears and the back of the . If a belt has been worn while in the field, in their travel upward may be stopped by the and attach along the belt line. Protective cloth- also may be worn. Trousers tied around the es, high boots, and long sleeves taped around vrists are suggested. However, even though pro- ve clothing is worn, careful examination of the after leaving a tick-infested area should not liminated.

effective nonodorous prophylactic preparations been developed for application to the skin. A ally imbedded tick can be removed by carefully using tweezers, if available. Otherwise, a piece of paper may be used to grasp the tick by the head, close to the skin, and to pull it loose. The tick should be burned or dropped in some solution, such as kerosene, gasoline, alcohol, or turpentine. It is advisable to apply iodine to the site of the tick bite. After ticks have been removed, the hands should be washed thoroughly with soap and water. No spray has proved to be an effective tick-eradication agent. Dogs have been known to be susceptible to Rocky Mountain spotted fever; horses have not been shown to be hosts for this rickettsial disease which is transmitted to man by ticks. It is quite possible that there are variations in the attractiveness of individuals to ticks.

"STRING TEST" FOR PEPTIC ULCER

TO THE EDITOR:—*What is the opinion of the "string test" as an adjunct to x-ray examination in the diagnosis of peptic ulcers?*

E. R. Marshall, M.D., Munich, Germany.

ANSWER.—This consultant knows of the "string test" only by reputation and is of the opinion that it is not deserving of much consideration and certainly is not an adequate substitute for the direct radiologic demonstration of the crater in gastric or duodenal ulcer.

DANGER FROM USING RAIN WATER

TO THE EDITOR:—*For years a patient has been collecting rain water off her roof with which to preserve cucumbers. Recently she had asbestos shingles put on the roof. Is there any danger involved from the dyes and the asbestos in these shingles in continuing this practice?*

August J. S. Watzlavick, M.D., Schulenburg, Texas.

ANSWER.—If the patient's home is located in proximity to large orchards or gardens extensively treated with pesticidal sprays, chemicals which settled on the roof might prove more significant than the asbestos shingles. The asbestos in this roofing material is unimportant as to injury. Ordinarily the pebble material entering the product is dyed. Some colors, such as greens and yellows, may require the use of lead chromate which could prove harmful, although such

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answers here published have been prepared by competent authori- hey do not, however, represent the opinions of any medical or other ation unless specifically so stated in the reply. Anonymous commu- ns cannot be answered. Every letter must contain the writer's name dress, but these will be omitted on request.

chromates are little soluble. Tar products enter into the manufacture of asbestos shingles and could impart an unwanted taste to drinking or preserving water. This may be detected immediately, but undesired taste may exist without any injurious properties. The local department of health should be consulted as to the desirability and availability of quantitative tests for lead compounds and particularly if the color of the roofing is any shade of green or yellow.

SWIMMING CRAMPS AFTER EATING

To the Editor:—*Does swimming after eating give cramps?*

M. G. Radewan, M.D., Wenatchee, Wash.

Answer.—No relation between the time of the most recent meal and the frequency of cramps in swimmers was found in the study by Lanoue (*Res. Quart.* 21:153, 1950). Students in a required swimming course were observed for a total of 30,000 man-hours in the water, and painful, involuntary contractions of voluntary muscles were observed 63 times. The muscles of the calf were involved in 31 subjects; those of the abdominal wall were never involved in this series. The largest number of cramps, 16, occurred in the 3 p. m. class, as compared with 14 in the 9 a. m. and 11 in the 1 p. m. classes. No change in eating habits was advised, except in connection with such events as the 300-yard swim for time. In such events much nausea was avoided if swimmers skipped the preceding meal, regardless of the time. Since meals vary in size and since it is impossible to predict how much stress a swimmer is going to subject himself to, it is still good policy not to swim after a heavy meal and to schedule swimming events, especially if they are likely to involve competition or special stress, with due regard to usual mealtimes.

TREATMENT OF GIARDIA LAMBLIA INFECTION

To the Editor:—*May I again comment on the incorrect dosage of Acranil given by your consultant for the treatment of Giardia lamblia infection in the Queries and Minor Notes section of* The Journal *for June 29, 1957, page 1041, and my comment concerning this query in* The Journal *for Aug. 24, 1957, page 1998. The reference given by the consultant in support of the dosage regimen he proposed is in error of a decimal point (the text states 0.5 Gm. whereas it should be 0.05 Gm.). Such errors frequently creep into medical books and are often carried from one edition to the next (Craig and Faust: Clinical Parasitology, ed. 5, Philadelphia, Lea & Febiger, 1951, p. 147). De Muro and Grott (referred to in the Craig and Faust text) have reported that "Acranil, a hydrochlorate of an acridine compound, is even more efficient than Atabrine and is nontoxic." In their original papers (de Muro: Successful Treatment of Giardiasis in Man with Acranil,* Acta med. scandinav. 102:*17, 1939; Grott: Ueber eine wirksame Behandlung der Lambliase mit Acranil, einer neuen Akridin-Verbindung,* München, med. Wchnschr. 86:373, *1939) the Acranil tablet contained 0.05 Gm. Manson's "Tropical Diseases" (ed. 14, Baltimore, Williams & Wilkins Company, 1954, p. 540) also misquoted the dosages or used Craig and Faust as the authority instead of the original articles. (The paragraph referring to Acranil has been omitted from the sixth edition [1957] of "Clinical Parasitology" by Craig and Faust.) An additional source of evidence in regard to the proper dosage of Acranil in the treatment of giardiasis is the promotional literature published by the inventors and manufacturers of the drug, namely, "Bayer," of Leverkusen, Germany, entitled "Acranil: A Specific Remedy in the Treatment of Lamblia Intestinalis."*

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Rensselaer, N. Y.

TREATMENT OF ALLERGIC REACTIONS TO PROCAINE

To the Editor:—*The consultant's answer to the query regarding the treatment of allergic reactions to procaine in* The Journal *for Sept. 7, 1957, page 111, assumes that the questioner is referring to strictly immunological reactions mediated by antigen-antibody union. Such reactions, except for contact-type dermatitis, are indeed rare, and cases reported in the literature have been questioned.*

There are, however, fairly common reactions to the injection of procaine, sometimes classified under the loosely defined term "allergic" but more often referred to as "shock" for want of a better term. Symptoms of this type of reaction vary from mild apprehension, pallor, and tachycardia to the more serious marked fall in blood pressure, syncope, and even death. The best treatment of this type of reaction is adequate doses of barbiturates.

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WASHINGTON NEWS

ROM THE WASHINGTON OFFICE OF THE AMERICAN MEDICAL ASSOCIATION

resident Asks Private Aid
r Medical Schools . .

o Serious Increase in Asian Influenza
eath Rate Expected . .

estraint in Use of
CG Vaccine Advised . .

PRESIDENT CALLS FOR CITIZEN AID TO MEDICAL SCHOOLS

President Eisenhower is appealing directly to the siness community and citizens at large to help in lving the growing financial needs of existing med- al schools as well as schools yet unbuilt.

To an audience made up in the main of corpora- on executives and medical educators, the President ised this challenge: "Of one thing I am sure, this roblem of financing medical education must be et as we meet so many other problems: through e leadership of citizens who are aroused to a ucial need and who will arouse others."

Mr. Eisenhower spoke at a dinner honoring lfred P. Sloan Jr., retired industrialist and head of e Alfred P. Sloan Foundation. Mr. Sloan received om the National Fund for Medical Education the rank Lahey Memorial Award for service to the use of medical education. A. M. A. President avid Allman participated in the presentation. resident Eisenhower also has been a recipient of e award. The fund since 1951 has provided medi- al schools over 12 million dollars in what the Presi- ent described as "unrestricted moneys."

The President said that additional resources are vailable, citing the fact that U. S. incomes, "even fter taxes, never totaled so great a sum as they do ow." The only questions, he added, are "Will ough citizens become concerned enough? Will ough citizens think a little more deeply about hat they do with what they earn?"

There are ways in which federal, state, and local overnments properly can help, Mr. Eisenhower ld the meeting. He cited the fact that many states ow contribute support to medical schools as inte- ral parts of their state universities and that federal atching funds for certain phases of medical train- g, research, and construction facilities are avail- le. But then he sounded this warning:

"For government to take over all responsibility in is critical field would signal the onset of a grave flection of our nation's spirit."

The President said that "all of us can sense a disturbing disposition on the part of many groups throughout our land to seek solutions to their problems from sources outside themselves. Because life today is more complex and interdependent than ever before, we seem in every difficulty always more ready to lean on government than upon ourselves."

Mr. Eisenhower said that undoubtedly some of the growth of the federal role in our economy during the last 25 years has been inescapable, it being the result, in part, of depression, wars, and a continuing state of tension.

"The necessary and constructive use of government, however, must not lead to a doctrinaire and expedient reliance upon government," he added. "Freedom's permanent spiritual and intellectual values will always transcend any momentary material advantage resulting from regimentation. Moreover, in determining government's proper role, we must cast aside any morbid pessimism about the capacity of our private enterprise system to generate and maintain high levels of employment production and incomes."

Neither the President nor his Health Secretary, Marion B. Folsom, in a speech the day before to the Association of American Medical Colleges, mentioned specifically the administration's pending bill for federal construction aid to medical schools.

Mr. Folsom indicated that the administration was placing high hopes in the future findings of a medical research and education committee headed by Dr. Stanhope Bayne-Jones. The group will look into the impact of expanding research on medical education, and the relationship between federal and private research.

Mr. Folsom's comment: "We have passed through a decade of rapid growth of medical research, a decade of stress for medical schools. It is my hope that these consultants, with the help of the members of this association and other leaders, can be instrumental in helping us set a wise course for the decade ahead."

Secretary Folsom also urged the medical profession to provide more leadership and assistance in meeting the acute social and medical issues closely related to medicine. And medical schools, he said, have an increasing responsibility to train the profession to accept and exercise this role of broader leadership.

Both Mr. Folsom and Mr. Eisenhower cited statistics on the increased cost of educating a medical student and of Census Bureau projections showing a large increase in population and need for more medical schools.

(Continued on next page)

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Lown, B., and Levine, S. A.:
Current Concepts in Digitalis Therapy, Boston,
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PHS OFFICIAL EXPECTS NO HIGH DEAT RATE FROM ASIAN INFLUENZA

A Public Health Service official closely ident with epidemiology believes there is almost no p bility that deaths from Asian influenza will appro the rate of the 1918 influenza epidemic, nor t they will even equal the death rate in the mi 1928-1929 epidemic.

One of the statistical problems, he said, is t impracticability of making definitive tests in cases, which means there is no sure way of know just how many influenza-like cases actually Asian influenza. "However," he said, "when a nu ber of throat washings or blood tests are made, po tive findings appear among them."

With the unofficially estimated total of cases n at or past a million, PHS sounds this word of cauti on disease statistics:

"Some states report only absenteeism in scho or other special groups, some report only rates absenteeism for various groups, and others use ca reports by physicians. Consequently, the figures incidence must be considered as rough estimat and should not be regarded as showing the preci incidence of influenza."

Meanwhile, a PHS survey of 112 cities shows 48% increase in death rate for influenza and pne monia within one week. Included in the cities wi sharp death rate increases are New York, Philade phia, Detroit, and Chicago.

Not every state has reported confirmation Asian influenza, nor has every region reported iso lations of virus or serologic confirmation.

In another development, PHS has added thr groups to those eligible to receive vaccinatio against Asian influenza: merchant seamen, PH laboratory research personnel, and children an staffs in Indian Bureau schools and dormitori

COMMITTEE URGES RESTRAINT IN USE OF BCG VACCINE

A special Public Health Service committee re ommends against mass campaigns with BCG v cine to control tuberculosis, proposing instead t it be used only in special situations where expos to the disease is unusually high and where oth means of control are inadequate.

The committee's conclusion is that use of vacci should be restricted to three groups:

1. Physicians and other medical personnel wor ing in hospitals with inadequate tuberculosis cont programs.
2. Families with whom a member infected w tuberculosis must reside.
3. Those associated with institutions in which posure is known to be high, such as certain men hospitals and prisons.

One of the important objections to BCG is t manner in which it interferes with case-finding surveys, because those vaccinated with BCG sh a positive reaction.

The committee explains its decision this way:

"The Committee, while unanimously agre that BCG confers some protection against tub culosis, considered at length whether or not t amount of protection provided by vaccination sufficient to justify greater use of BCG in t nited States in the light of current general progss in tuberculosis control and in the face of the veral disadvantages noted.

“In the absence of consistent and convincing evince of persisting protection and in the light of greatly decreased risk of infection and its conseences, the Committee expressed the opinion that e use of BCG should be determined by the parular circumstances obtaining in a local commuity or population group, and that the determination ould be based on a wide variety of factors, among e most important of which will be the strength f the tuberculosis program as a whole, the prevance of tuberculosis in the community at the time nd the probable risk of infection in the future. In eneral, the question will come up for decision iefly in groups or communities where exposure high and weakness in other means of control is cognized. It was believed by the Committee that e responsible officials in such communities and roups should be sufficiently well informed on the dvantages and disadvantages of BCG vaccination, rough currently available reports, to make an inlligent decision.

“The Committee is convinced that large-scale CG vaccination programs, including routine vacination of the newborn, are not indicated in this ountry. It is believed, however, that the advanges of vaccination outweigh the disadvantages r tuberculin-negative persons who are exposed to definite risk of infection, especially if they cannot e retested frequently with tuberculin.”

Members of the committee are Rene Dubos, ockefeller Institute for Medical Research, New ork; Herman Hilleboe, Commissioner of Health, ew York state; Horace L. Hodes, Chief, Pediatric ervice, Mt. Sinai Hospital, New York; Esmond R. ong, retired medical director, Henry Phipps Instiute, Philadelphia; Walsh McDermott, editor, *Ameran Review of Tuberculosis and Pulmonary Disases,* New York; Gardiner Middlebrook, director of esearch, National Jewish Hospital, Denver; Rufus . Payne, director Eugene Talmadge Memorial ospital, Augusta, Ga.; James E. Perkins, managing irector, National Tuberculosis Association, New ork; Leon H. Schmidt, director Christ Hospital nstitute for Medical Research, Cincinnati; Jacob erushalmy, professor of biostatistics, University of alifornia School of Public Health, Berkeley.

MISCELLANY

The Selective Service (in DP Circular no. 57-10) ives a complete outline of obligations of physicians nder the doctor-draft amendment, which replaced e original doctor-draft act last July 1. . . . A survey f manpower needs of private atomic energy indusies, made under contract with the Atomic Energy ommission, estimates the need for atomic scientists nd engineers will double in the next three years, although there does not now appear to be a critical ortage.” . . . A United States atoms-for-peace ission scheduled to visit Latin America has postoned its trip to a later date. . . . The U. S. tax court as ruled that the extra costs of operating a specialy equipped auto to carry a disabled taxpayer to nd from his job are not deductible as a direct cost f earning an income. The court held that additional osts for operating the vehicle “are nothing more han commuter's expenses which are personal in ature.”

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VOL. 165, NO. 9
CHICAGO, ILLINOIS
NOVEMBER 2, 1957
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ETIOLOGY AND EPIDEMIOLOGY OF VIRAL HEPATITIS

W. Paul Havens Jr., M.D., Philadelphia

Two immunologically distinct forms of hepatitis are generally recognized at present, although it is not known whether they represent different diseases or variant forms of a single disease. The relationship between them is obscure. An attack of infectious hepatitis confers homologous immunity, and this disease may be prevented by the administration of normal immune globulin. In contrast, the status of homologous immunity in serum hepatitis is equivocal, and attempts to prevent it by the administration of normal immune globulin have usually been unsuccessful. Epidemiologic and experimental evidence indicates that there is no cross immunity between the infections caused by viruses A and B. The prevention of infectious hepatitis is concerned with improvement in sanitation, the avoidance of fecal contamination of food and water, and the prohibition of persons who are potentially infected from acting as food handlers. Because of the carrier rate and the relative resistance of hepatitis virus to heat and other physical and chemical agents, it has been recommended that every parenteral penetration be performed with instruments sterilized by boiling in water for 30 minutes, or with steam under increased pressure (15 to 20 lb.) for 20 minutes, or with dry heat (180 C for one hour).

THE TREMENDOUS interest in viral hepatitis in the past 15 years has been largely generated by its pandemicity during this period. Two immunologically distinct forms of hepatitis are generally recognized at present, although it is not known whether they represent different diseases or variant forms of a single disease. The similarities and differences between them and their causative agents are recorded in the table. The epidemic or sporadic form of the naturally occurring disease is commonly known as infectious hepatitis, caused by virus A. Another type of disease, designated as serum hepatitis, is transmitted by the parenteral inoculation of contaminated blood or its products or by the use of incompletely sterilized instruments. It has been recommended that the agent causing this be called hepatitis virus B.[1] The relationship between these two diseases is obscure. The curious apparent dependence of virus B on artificial transmission, its long incubation period, and the contradictory evidence of immunity following infection with it stimulate speculation on the possibility that the family which goes to make up virus B may represent variants of virus A, which is normally transmitted through the intestinal-oral route, produces disease after a short incubation period, and evokes a fairly solid immunity in man.

The definition of serum hepatitis on the basis of the route of inoculation of its causative virus is unfortunate, since virus A may also be found in the blood and transmitted parenterally. Another source of confusion recently recognized is concerned with the fact that the emphasis previously placed on the great difference in the length of in-

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From the Jefferson Medical College.

Read in the Symposium on Hepatitis before the Section on Gastroenterology and Proctology at the 106th Annual Meeting of the American Medical Association, New York, June 5, 1957.

cubation period in these two forms of hepatitis may require modification. The incubation period for infectious hepatitis (virus A) is generally believed to be from 15 to 40 days, while that for serum hepatitis (virus B) is from 60 to 160 days. However, Ward and Krugman[2] recently demonstrated an intermediate incubation period of 40 to 65 days in an epidemic form of hepatitis in an institution for mentally retarded children. This disease may be prevented by the administration of normal immune globulin, which groups it with infectious hepatitis rather than with serum hepatitis.

Knowledge of both forms of hepatitis is still sharply curtailed by the failure (*a*) to develop specific serologic tests and (*b*) to transmit either virus A or B to animals, embryonated eggs, or tissue culture. For these reasons, in particular, the etiology and epidemiology of hepatitis are poorly defined, and the available information is largely derived from experiments in volunteers and observation of the natural history of disease among civilians and the military. In spite of the limitations imposed by these sources, they have been productive of certain concepts of the causative agents, their ways of spread and maintenance in nature, and the immunologic responses they evoke. Many of these concepts await the definitive support of more exact methods.

Etiology

Infectious Hepatitis.—Virus A passes a Seitz E. K. filter and is apparently highly resistant to a number of physical and chemical agents. It is present in the blood, duodenal contents, and feces of patients in the acute phase of disease and may be transmitted experimentally by oral and parenteral inoculation. The duration of infectivity is not known. Although it is generally believed that virus disappears from the blood and feces of patients after the first two to three weeks of disease, it has been demonstrated on two occasions that infants with persistent evidence of activity of hepatitis may be carriers of virus in the feces as long as 5 and 16 months after onset of disease.[3] In addition, the occurrence of hepatitis in volunteers or in patients within a short incubation period after receiving blood from proved or presumed carriers indicates that there doubtless exists an asymptomatic carrier state for virus A in the blood of certain persons.

In the absence of a specific serologic test, it is difficult to evaluate the immune response in man after infectious hepatitis. Second attacks are uncommon, and when they do occur it is impossible to determine whether they represent infection with the same strain or with a different strain of virus. Epidemiologic and experimental evidence indicates that there is no cross immunity between the infections caused by viruses A and B. However, there is considerable evidence that an attack of infectious hepatitis confers homologous immunity. Experimentally, limited data indicate that volunteers recovered from infection with virus A were immune when reinoculated with virus A.[4] In addition, the natural history of the disease, with its predilection for children and young adults, its occurrence in epidemics among susceptible immigrants entering areas where the disease is endemic, and the long intervals between outbreaks in localized areas, supports the concept that fairly solid immunity follows infection with virus A. To this, the proved prophylactic value of normal adult human gamma globulin adds confirmatory evidence.[5]

Serum Hepatitis.—Virus B is also highly resistant to various physical and chemical agents. Its exact size is not defined, but it passes through a gradocol membrane of 52 mμ average pore diameter, indicating a size of 26 mμ or less.[6] It is present in the blood during the long incubation period and in the acute phase of disease and may be transmitted experimentally by parenteral inoculation. It has not been found in the feces. The duration of infectivity is not defined. Although limited experiments in volunteers indicated that virus was no longer detectable in the blood one month after onset of disease, subsequent observations have shown that virus B may persist in the blood for as long as five years.[7]

The nature and degree of the immune response in serum hepatitis are poorly defined. As stated above, there is no cross immunity between the diseases caused by virus A and virus B. However, even the

*Comparison of Certain Features of Infectious Hepatitis and Serum Hepatitis and Their Causative Agents, Virus A and Virus B**

	Hepatitis	
Clinical and Epidemiologic Features	Infectious	Serum
Incubation period, days	15-40	60-160
Type of onset	Acute	Insidious
Fever—over 38 C (100.4 F)	Common	Uncommon
Seasonal incidence	Autumn-winter	Year round
Age preference	Children and young adults	Any age
	Virus A	Virus B
Filterability		
Seitz E.K. filter	Passed	Passed
Gradocol membrane with pore size 52 mμ	Not done	Passed
Susceptible host	Man	Man
Virus in feces	Acute phase	Not demonstrated
Virus in duodenal contents	Acute phase	Not done
Virus in blood	3 days before onset and in acute phase	Incubation period and acute phase
Route of infection (experimental)	Oral and parenteral	Parenteral
Duration of carrier state		
blood	Unknown	As long as 5 yr. (one adult)
feces	As long as 16 mo. (one child)	Not demonstrated
Immunity		
homologous	Present	Equivocal
heterologous	None apparent	None apparent
Prophylactic value of gamma globulin	Good	Equivocal or absent

* This material was derived from Expert Committee on Hepatitis

atus of homologous immunity in serum hepatitis equivocal. Experimentally, volunteers recovered om serum hepatitis were immune when reinocu- ated with the homologous strains of virus B several onths later.[8] In addition, the fact that a large ercentage of persons inoculated with virus B, ither as volunteers or as patients receiving con- aminated transfusions of blood or plasma, fail to ontract hepatitis suggests the possibility that anti- ody may be present. However, Drake and associ- tes[9] failed to prevent infection with virus B in olunteers simultaneously inoculated with virus and ith gamma globulin prepared from persons con- alescent three months to three years after serum epatitis. These latter results are in accord with e apparent failure of normal human gamma glob- lin to prevent serum hepatitis consistently in eld trials.

Of interest in this regard is the fact that infections ith virus B apparently do not have a predilection or any period of life, and all age groups appear be susceptible. It is not known whether this ide susceptibility is due to (*a*) insufficient ex- osure to virus because of the artificial way of trans- ission, (*b*) the failure to develop or maintain dequate immunity after exposure, or (*c*) the exist- nce of multiple strains of virus that are immuno- ogically unrelated. The latter two speculations are articularly pertinent when, as occasionally hap- ens, more than two attacks of hepatitis occur in he same patient.[9] Under such a circumstance, the ossibility must also be considered that carriers of epatitis virus may have sufficient disturbance in he equilibration between host and virus as to result n repeated attacks of clinical disease.

Epidemiology

Infectious Hepatitis.—There are no known geographical or climatic limitations to this disease. It s ubiquitous, with long-term variations in preva- ence resulting in epidemics and pandemics at irreg- lar intervals.

While commonly regarded as a disease of the utumn and early winter, it may occur at any time nder proper conditions. Actually, it would appear hat the seasonal variations in incidence may be- ome far less sharp within the same geographical rea when environmental conditions are altered. A lassic example of this was the experience of Amer- can troops in Germany, where a large epidemic ccurred in the winter of 1944-1945, followed by reatly diminished seasonal variations during the nsuing years of occupation. This endemiologic attern was never adequately explained. A study of he duration of residence in Germany before the nset of hepatitis showed that it was uncommon for merican soldiers to contract hepatitis before four o five months of residence and that the morbidity eached a peak at the end of one year. It is unknown vhether the prolonged initial delay in acquiring hepatitis was the result of delay in exposure or indicated the long incubation period of artificially transmitted virus.[10] In regard to the latter, it is of interest that Evans[11] recovered virus from the blood of a soldier with hepatitis in Germany that produced the disease in volunteers after a moderately long incubation period.

In civilian populations, infectious hepatitis is generally a disease of children, with the highest attack rates in children between 10 and 14 years of age. However, it is likely that infection without jaundice in young children is far more common than was previously suspected. It has been shown to be widely prevalent in institutions, particularly for retarded children, and it has been suggested that, under such circumstances, these children frequently serve as a source of infection to the adults. In military groups, infectious hepatitis is more common among the younger age groups than the older, and it has been assumed to be due to increased susceptibility, although it is entirely possible that differences in degree of exposure or other as yet unexplained factors may account for this differential. Of particular interest has been the possibility that certain specific factors related to sex may be of importance in morbidity as well as mortality. In support of this have been the observations that the incidence is considerably higher among girls shortly after menarche, and the mortality considerably greater among women beyond the menopause.

Explosive epidemics are not unusual in civilian and military populations. However, slowly developing outbreaks occur, with the straggling appearance of cases over several months. In family outbreaks, the children are frequently the first to become sick and apparently serve as sources of infection to the adults, with secondary cases occurring two to four weeks later. In the military, it is generally believed that the continued introduction of susceptible persons and the wide dissemination of virus by movement of troops under conditions suitable for transmission of virus contribute to the maintenance or increase of epidemicity.

Person-to-person contact is doubtless the most important way of spread of infectious hepatitis, although dramatic examples of water-borne outbreaks and presumably food-borne and milk-borne outbreaks have been described. The fact that virus is present in the feces of patients with the disease and may be transmitted experimentally by feeding suggests that the fecal-oral route is primarily involved in transmission. The common association of outbreaks with poor sanitation and crowding supports this concept.

The duration of infectivity is not known exactly but the evidence suggests that there is, in most cases, a relatively short period of infectivity in the acute phase of the disease, although some patients may be infectious earlier or later. Experimental and epidemiologic evidence also suggests that carriers, both sick and healthy, are of great importance in the maintenance of virus in nature and the spread of disease.[3]

The artificial transmission of infectious hepatitis doubtless occurs more frequently than is suspected. The presence of hepatitis virus in the blood of patients, its high degree of resistance to physical and chemical agents, its infectivity by parenteral inoculation, and the occurrence of hepatitis in volunteers or patients within a short incubation period after receiving blood from proved or presumed carriers substantiate this concept.

The prevention of infectious hepatitis is concerned with improvement in sanitation, the avoidance of fecal contamination of food and water, and the prohibition of persons who are potentially infected from acting as food handlers. General control measures for other enteric infections should be used for patients with the disease. Of particular importance are thorough washing and sterilizing with heat all needles and syringes that come in contact with the blood of such patients. Specifically, normal human gamma globulin in amounts as small as 0.01 ml. per pound of body weight, administered intramuscularly, is effective in preventing the disease when given up to within six days before onset.

Serum Hepatitis.—This disease undoubtedly occurs wherever human blood or certain of its products are used or where parenteral penetrations are made. Thus, the widespread practice of such procedures, the unusual resistance of virus to various physical and chemical agents, and the frequency and prolonged duration of the carrier state in man are important determining factors in its epidemiology and have contributed to the increase in the incidence of hepatitis during the past 15 years.

Since the occurrence of serum hepatitis is dependent, according to present arbitrary definition, on artificial inoculation, its seasonal incidence is probably closely related to the time of preceding inoculation and the concentration of available virus.

The known coexistence of virus A and virus B in the same area suggests the possibility that the relationship between them is, under certain circumstances, closer than is commonly suspected, although definite proof of this is not available. More than one attempt has been made to relate outbreaks of serum hepatitis in certain clinics giving parenteral therapy to epidemics of infectious hepatitis that had occurred three to four months previously in the same groups.[12] This sequence of events and the sharp decrease in the incidence of serum hepatitis after the institution of improved techniques for the sterilization of syringes and needles have been interpreted as being consistent with the hypothesis that both types of disease were caused by the same icterogenic agent, with the prolonged incubation period of serum hepatitis a result of the parenteral route of inoculation. There is, however, insufficient evidence at present to support this concept and actually, in contradiction are the results of limited experiments in volunteers with one strain of virus A that produced hepatitis without significant difference in length of incubation period following oral and parenteral inoculation.[13] Other explanations of the long incubation period of serum hepatitis include individual differences in the host and changes in environmental conditions affecting the host.[11] However, it can only be said at present that none of these speculations has sufficient support to warrant accepting a unitarian concept that implies a single strain of hepatitis virus.

The prolonged period of infectivity in serum hepatitis and appreciation of the role of the carrier as a virus reservoir, and therefore important in the maintenance of this infection in nature, are well established. Of particular interest in this regard is the evidence suggesting that hepatitis virus may be transmitted by infected mothers to infants in utero.[7] Vehicles for the transmission of serum hepatitis include whole blood, plasma, dried human serum, fibrinogen, thrombin (thromboplastin [placental extract] used as activator might contain the virus), Cohn's fraction 4, and probably packed red blood cells. Human albumin and gamma globulin are not concerned in its transmission. The importance of contaminated instruments, particularly syringes and needles, is well illustrated by the occurrence of hepatitis among narcotic addicts and after tattooing; among patients receiving vaccinations or therapy for syphilis, tuberculosis, and pernicious anemia; and in diabetics. Attention has been called to the potential danger of transmission by dental manipulations.

Explosive outbreaks of serum hepatitis may occur after the inoculation of a group of persons with human blood or certain of its products contaminated with hepatitis virus B. A classic example of this was furnished by the experience of U. S. troops in World War II with some lots of contaminated yellow fever vaccine.[14] Of particular importance, however, has been the recognition of outbreaks in clinics where incompletely sterilized instruments were used and where the chances of contamination by carriers of virus were frequent. Characteristically, these cases appear in a straggling manner throughout the year, apparently dependent, in part on the number of available carriers and the degree of cleansing and sterilization of equipment. That the pattern of such outbreaks might be influenced by the parenteral transmission of virus A as well as virus B was suggested by Wewalka,[15] who pointed out that certain patients had the onset of hepatitis after a short (22 days) or moderately prolonged (54 days) incubation period, followed by recovery and subsequently by a second attack after a long incubation period. This evidence strongly suggested the coexistence of at least two immunologically distinct icterogenic viruses that in this situation had been transmitted parenterally, possibly simultaneously.

The high degree of resistance of hepatitis viruses to various physical and chemical agents complicates the problem of prevention. Numerous attempts to sterilize whole blood or plasma of virus B have been made, by the use of ultraviolet light, nitrogen mustard, sulfur mustard, beta-propiolactone, and storage at room temperature for six months. Although apparent success has been achieved on occasion, none of these methods has been proved to be effective consistently. However, the evidence obtained experimentally and by follow-up studies of patients receiving plasma suggests that the use of one or more of them probably inactivates virus in some degree, holding out the hope that eventually it may be possible to reduce the incidence of infection by the application of one or more of these methods.

Because of the carrier rate and the relative resistance of hepatitis virus to heat and other physical and chemical agents, it has been recommended that every parenteral penetration be performed with instruments sterilized by boiling in water for 30 minutes, or with steam under increased pressure (15 to 20 lb.) for 20 minutes, or with dry heat (180 C for one hour). The importance of thorough cleansing of all instruments before attempts at sterilization has been emphasized. Specifically, attempts to prevent serum hepatitis by the administration of normal human immune globulin have had equivocal results and, in general, have been unsuccessful.

Summary

The known similarities and differences between infectious hepatitis and serum hepatitis and their causative viruses (A and B) are summarized. Both viruses may coexist in the same area, producing two forms of hepatitis that are clinically indistinguishable although immunologically distinct. The epidemiology of serum hepatitis is often closely associated with that of the epidemic disease, and the potential confusion that may arise under the circumstances of a natural and an artificial way of transmission is evident. The solution of many of the problems arising from this situation awaits the development of specific serologic methods.

Many of the investigations described herein were sponsored by the Commission on Viral Infections or the Commission on Liver Diseases of the Armed Forces Epidemiological Board, and were supported in whole or in part by the Office of The Surgeon General, Department of the Army.

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POSTHEPATITIC CIRRHOSIS

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The most common pathogenic factor in postnecrotic cirrhosis is an illness which resembles in all respects acute infectious hepatitis. How often cirrhosis follows hepatitis is not known, but there are patients whose illness progresses to cirrhosis while they are under observation. Furthermore, patients with at least one type of cirrhosis often give a history of a preceding hepatitis. The pathological process of postnecrotic cirrhosis consists of necrosis of liver cells, regeneration of hepatic tissue, and the formation of large bands of connective tissue which course irregularly through the liver. The factors which determine whether cirrhosis occurs following acute infectious hepatitis, as well as the variety of cirrhosis that develops, are all still unknown.

Acute infectious hepatitis is usually a self-limited disease from which the patient makes a complete recovery. In a small number of cases, overwhelming hepatic injury may lead to death. More commonly, convalescence often seems interminable, and in many patients a year or more elapses before recovery seems complete. In other instances, after what seems an ordinary case of hepatitis, the patient goes on to have one form or another of cirrhosis of the liver. In most instances, this cirrhosis has the characteristics of the postnecrotic variety, but the lesion may be indistinguishable from ordinary Laennec's cirrhosis,[1] and even cholangiolitic cirrhosis [2] has been described.

The significance of cirrhosis following hepatitis is at the moment in a state of considerable confusion. It is difficult to find the answer to even the simplest questions. It seems worthwhile to look at some of these questions, and at the reasons that they seem unanswerable.

Incidence

To start at the beginning, how often does cirrhosis follow acute hepatitis? One can answer only in the vaguest terms. For example, Zieve and his associates [3] found evidence of cirrhosis by biopsy in only 1 of 60 individuals who had had hepatitis some years before—an incidence no greater than in their controls. Similarly, Post, Gellis, and Lindenauer [4] noted postnecrotic cirrhosis in 2 of 114 individuals studied 7 to 60 months after an episode of acute hepatitis. Neefe and his collaborators [5] found no evidence of cirrhosis among any of 271 persons who had apparently recovered from hepatitis four to eight years before their study. One would conclude from such data that cirrhosis had little or no relationship to hepatitis, but there is considerable evidence to the contrary drawn from two types of observations. In the first place, there are patients with hepatitis whose illness progresses to cirrhosis while they are under observation. And secondly, patients with at least one type of cirrhosis often give a history of a preceding hepatitis. Thus the answer to the question, how often does cirrhosis follow hepatitis, is not known, but it is certainly more often than chance.

Type of Cirrhosis

The second question to be raised is what type of cirrhosis follows hepatitis. As I have said, the most frequent variety is postnecrotic cirrhosis, but other types have been described as well. What is postnecrotic cirrhosis? In this disease, the pathological process consists of necrosis of liver cells, regeneration of hepatic tissue, and the formation of large bands of connective tissue which course irregularly through the liver. In some parts of the liver, the normal hepatic architecture is preserved. This is the lesion which has been called, among other names, healed acute yellow atrophy, multilobular nodular hyperplasia, coarse nodular cirrhosis, or toxic cirrhosis. In contrast, in Laennec's cirrhosis, the liver typically shows a diffuse fibrosis involving all the lobules, with disruption of the normal relationships within the lobules. It is so diffuse that every microscopic field appears to be involved in the process. Fatty infiltration, a commonplace finding in Laennec's cirrhosis, is either absent or minimal in postnecrotic cirrhosis.

Is the distinction between postnecrotic and Laennec's cirrhosis genuine or specious? In the early part of this century, many clinicians considered that the two disorders were fundamentally the same, a concept fostered by Fiessinger. Current evidence, however, suggests that they do represent separate pathological processes. If one examines the background of patients with postnecrotic cirrhosis, distinct differences are noted in comparison with pa-

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tients with Laennec's cirrhosis. In the first place, Laennec's cirrhosis occurs at least twice as frequently in males as in females. In contradistinction, in a group of 45 cases of postnecrotic cirrhosis which were studied by me in association with Patek,[6] 60% of patients were females. The preponderance of cases in females has been observed by others. Postnecrotic cirrhosis may appear at any age, but in general it is more prone to occur earlier in life than Laennec's cirrhosis.

The most common pathogenic factor in postnecrotic cirrhosis is an illness which resembles in all respects acute infectious hepatitis. Among the 45 cases in this series, there were 12 patients in whom the initial symptoms of cirrhosis could not be distinguished from an attack of acute infectious hepatitis. Two of these 12 patients had been in close contact with individuals with acute hepatitis. A third had been under treatment with arsenicals during the era before adequate precautions were taken against the parenteral transmission of the virus of hepatitis. In the other nine instances, no known contact with hepatitis or exposure to known hepatotoxic agents was evident. In addition to these 12 patients, there were 6 others who had a history of an attack of acute hepatitis 5 to 12 years before the clinical onset of cirrhosis. They were distinguished from the first group only by the fact that there was a latent period between the first episode of jaundice and subsequent symptoms.

The occurrence of a latent period of many years between the original hepatitis and the subsequent cirrhosis was described some years ago by Cullinan [7] and by Bloomfield.[8] In contradistinction to postnecrotic cirrhosis, only about 6% of patients with Laennec's cirrhosis give a history of jaundice at some time prior to the onset of their illness.[9] It must be emphasized, however, that there is no proof that any of the cases of postnecrotic cirrhosis resulted from infection with the virus of acute infectious hepatitis. Until some microbiologic technique is devised which makes it possible to distinguish viral hepatitis from other types of hepatic disease, one must always consider the possibility that the resemblance between the initial symptoms of postnecrotic cirrhosis and the symptoms of acute infectious hepatitis is merely a coincidence.

Influences on the Course of Hepatitis

The factors which play a role in determining whether a patient with hepatitis recovers or his condition progresses to cirrhosis are not clear. Although cirrhosis probably occurs most often after severe, protracted, or relapsing hepatitis,[10] in some cases the initial episode of hepatitis does not appear to be exceptionally severe.[11] We do not know whether constitutional or environmental factors are involved in the patients who develop cirrhosis. We do know that postnecrotic cirrhosis may follow exposure to a number of chemical agents, for example, trinitrotoluene, arsenic, phosphorus, chloroform, carbon tetrachloride, trichloroethylene, camphor, and most especially cinchophen. Among the 45 cases of postnecrotic cirrhosis, only 8 were in patients who had been exposed to chemicals with hepatotoxic properties, and only one of the patients had symptoms suggesting acute hepatitis.

Among chronic alcoholics, Laennec's cirrhosis is by far the most frequent type of cirrhosis which is encountered. However, it is of considerable interest that 12, or 29%, of the 45 patients with postnecrotic cirrhosis admitted the prolonged consumption of alcoholic beverages in the years preceding their illness. In view of experimental work on cirrhosis in animals, this is not surprising. The administration of alcohol to experimental animals does not result in hepatic lesions. However, in patients with cirrhosis of the liver, chronic alcoholism is commonly accompanied by prolonged dietary inadequacy. Experimental animals fed certain deficient diets develop hepatic necrosis, fatty infiltration of the liver, and cirrhosis.

As Daft, Sebrell, and Lillie,[12] Himsworth and Glynn,[13] and György and Goldblatt [14] have shown, whether one finds fatty infiltration and fibrosis, on the one hand, or hepatic necrosis, on the other, depends upon relatively small differences in the composition of the diet. Experimental fatty infiltration and fibrosis resemble Laennec's cirrhosis, and hepatic necrotic lesions may progress to a condition resembling postnecrotic cirrhosis. When one considers the multiplicity of host and environmental factors in human cases, it is not surprising that one may find one or the other lesion following what seem superficially to be identical stresses. Whether postnecrotic cirrhosis in these alcoholic patients was related to nutritional deficiency, as in the experimental animal, or whether these patients were more susceptible either to hepatotoxic agents or to the virus of hepatitis is not possible to determine.

The question remains, why do some cases of what seems to be hepatitis progress to cirrhosis. Is there some inadvertent exposure to a toxic agent which alters the course of acute hepatitis? In this connection it is of interest to relate the stories of lactophenin and Senecio. Lactophenin, which chemically is a cousin of aspirin, was used as an antirheumatic agent in Scandinavia. However, lactophenin had remarkable side-effects.[15] More than half of the patients who took this drug experienced an illness surprisingly like acute infectious hepatitis, starting some 9 to 12 days after therapy began. They had epigastric pain, nausea, vomiting, fever, jaundice, and abnormal urinary excretion of urobilinogen and bilirubin. Happily, complete recovery was the rule. Lactophenin itself is not directly hepatotoxic for experimental animals. Mirick and I gave large quantities of this drug to monkeys and rats who seemed not to turn a hair. One is led to wonder whether this drug in some way activates a virus latent within many of us so as to produce the symptoms of hepatitis.

By an extension of this logic, can postnecrotic cirrhosis result from a combination of events, i. e., infection by the virus of acute hepatitis and some other host or environmental stimulus? This was the chain of logic used by Theiler[16] in 1918 to explain differences in the severity of hepatitis in horses. Theiler had discovered that certain horse serums would produce hepatitis when injected into other horses. This homologous serum jaundice was mild in horses who lived in the laboratory, but was severe in those who worked on the South African veld. Theiler wondered whether this homologous serum jaundice of horses was potentiated, in the working horses, by the ingestion of the ragwort or Stinking Willie, a plant upon which they grazed when more succulent fodder was not available. Ragwort is a plant with hepatotoxic properties due to its content of a Senecio alkaloid.

Thus we again face the question as to whether the course of hepatitis may be altered by extraneous factors. This point of view can be illustrated by the case of a young woman who has been seen over a period of several years at University Hospitals of Cleveland. Several months after she was given a blood transfusion, she had an attack of what seemed to be typical homologous serum jaundice. However, the patient never fully recovered and her illness has since progressed in the relentless fashion of postnecrotic cirrhosis. She has ascites, jaundice, and other evidences of chronic hepatic disease. The diagnosis of postnecrotic cirrhosis seems corroborated by needle biopsy of the liver. Yet the pathogenesis of our patient's illness is by no means as clear as it was when she was first seen, for now we have had the chance to observe that she is a chronic alcoholic of considerable stature.

Other possible influences upon the course of hepatitis must be considered. For example, Kunkel and Labby[17] thought that too rapid a return to activity following acute hepatitis favored the development of cirrhosis and that an intermittent infection might also be deleterious.

One may multiply instances of our lack of knowledge concerning posthepatitic cirrhosis. Most unfortunate of all, we have no knowledge of a really rational therapeutic program which will significantly alter the course of the disease.

Summary

I have tried to present some evidence of the state of our ignorance concerning the relationship between acute infectious hepatitis and cirrhosis. Although cirrhosis may occasionally follow what seems to be acute infectious hepatitis, the factors which determine whether cirrhosis occurs and which variety of cirrhosis develops are all unknown. The solution of this problem would seem to awa the development of adequate means of making a definitive diagnosis of viral hepatitis.

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PATHOLOGICAL ANATOMY OF HEPATITIS

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The histopathological features of hepatitis have been studied in preparations of tissue obtained by needle biopsy in nonfatal cases and at autopsy in others. The nonfatal forms are classified as acute, persistent, or recurrent. The basic lesion is the result of the degeneration, necrosis, and disappearance of hepatic parenchymal cells; to this are added mononuclear cell increase, reticuloendothelial proliferation, and regenerative phenomena, which alter the lobular pattern but do not damage the reticular framework. Healing may be complete. The fatal forms include fulminant viral hepatitis, subchronic (subacute) atrophy, and posthepatitic cirrhosis. In these forms the destruction of parenchyma is followed by regenerative activity so varied in extent, duration, distribution, and intensity that a wide variety of lesions result. Collapsed lobules, eccentrically placed vessels, and gross deformity by regenerative nodules interfere with the normal flow of blood and result in an increased flow of lymph. The number of lymphatic vessels countable in the hepatoduodenal ligament increases, and their walls become dilated and hypertrophic. These and other types of circulatory disturbance probably contribute to the progression of the cirrhosis in the absence of further infection.

The great variety of hepatic lesions that occur as result of viral hepatitis can perhaps be best decribed in a brief presentation such as this by ividing them arbitrarily into four broad groups as ollows: nonfatal hepatitis with complete healing, ulminant hepatitis, subchronic atrophy, and postepatitic cirrhosis.

Nonfatal Hepatitis

Our knowledge of the histopathological features f nonfatal hepatitis has been obtained largely by eedle biopsy.[1] This type of hepatitis may be acute, ersistent, or recurrent.

Acute Nonfatal Hepatitis.—The basic lesion in cute nonfatal hepatitis is the result of degeneration nd necrosis of hepatic cells. This destructive procss occurs diffusely in the liver but varies in inensity throughout the lobule and is apparent for he most part by the presence of foci of mononulear and Kupffer's cells in which parenchymal lements can no longer be seen (fig. 1*a*). In addition o focal collections of reticuloendothelial cells, there s a diffuse increase in these cells and they frequenty contain yellow pigment which has been identified s lipofuscin. This is interpreted as further evidence hat necrosis of hepatic cells has occurred.

The complete and apparently sudden destruction nd disappearance of the hepatic parenchymal cell re characteristic of the behavior of viral hepatitis nd are quite unlike the more gradual degenerative processes, often with an intermediate stage of fatty degeneration, which are observed in some varieties of toxic hepatitis. Exceptions to the cells in which disintegration is apparently rapid are the cells that are shrunken and bile-stained and others that appear hyalinized and stain deeply with eosin. The latter develop later into so-called acidophilic bodies; they are the result of hyalinization and shrinkage of the cells with ultimate extrusion from the hepatic cell plate into the sinusoids or space of Disse (fig. 1*b*). The acidophilic change is accompanied by pyknosis and later by disappearance of the nucleus.

These acidophilic bodies also can be observed in other hepatic lesions, such as chronic passive congestion, obstructive jaundice, and yellow fever, and in themselves are not pathognomonic of viral hepatitis. They should not be confused, however, with Mallory's alcoholic hyalin,[2] which is an entirely different and distinct lesion and is found in its typical form practically only in the livers of chronic alcoholics. In this connection also should be mentioned the more rarely observed acidophilic cytoplasmic inclusion bodies described by Thaler.[3] Another cellular alteration which is more frequently observed but which may be an early degenerative phenomenon has resulted in cells designated as "balloon cells."[4] These are markedly enlarged cells in which there is a clearing of the cytoplasm which is not the result of either glycogen storage or fat accumulation. They are sometimes multinucleated or reveal mitotic figures. Frequently they occur in small groups (fig 1*a*).

Regenerative activity is vigorous and, according to Thaler,[3] mitotic activity may be observed even before there is much evidence of cellular necrosis. Regeneration occurs as a result of both mitotic and amitotic cell division and is indicated by the large numbers of multinucleated cells. The combination

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Read in the Symposium on Hepatitis before the Section on Gastroenterology and Proctology at the 106th Annual Meeting of the American Medical Association, New York, June 5, 1957.

of individual cell degeneration, focal necrosis, mononuclear cell increase, and reticuloendothelial proliferation, both focal and diffuse, together with the regenerative phenomena, leads to pronounced alteration of the normal lobular pattern of laminas radiating from a central vein. None of these changes, however, appear to damage the reticular framework of the lobule, which remains intact.

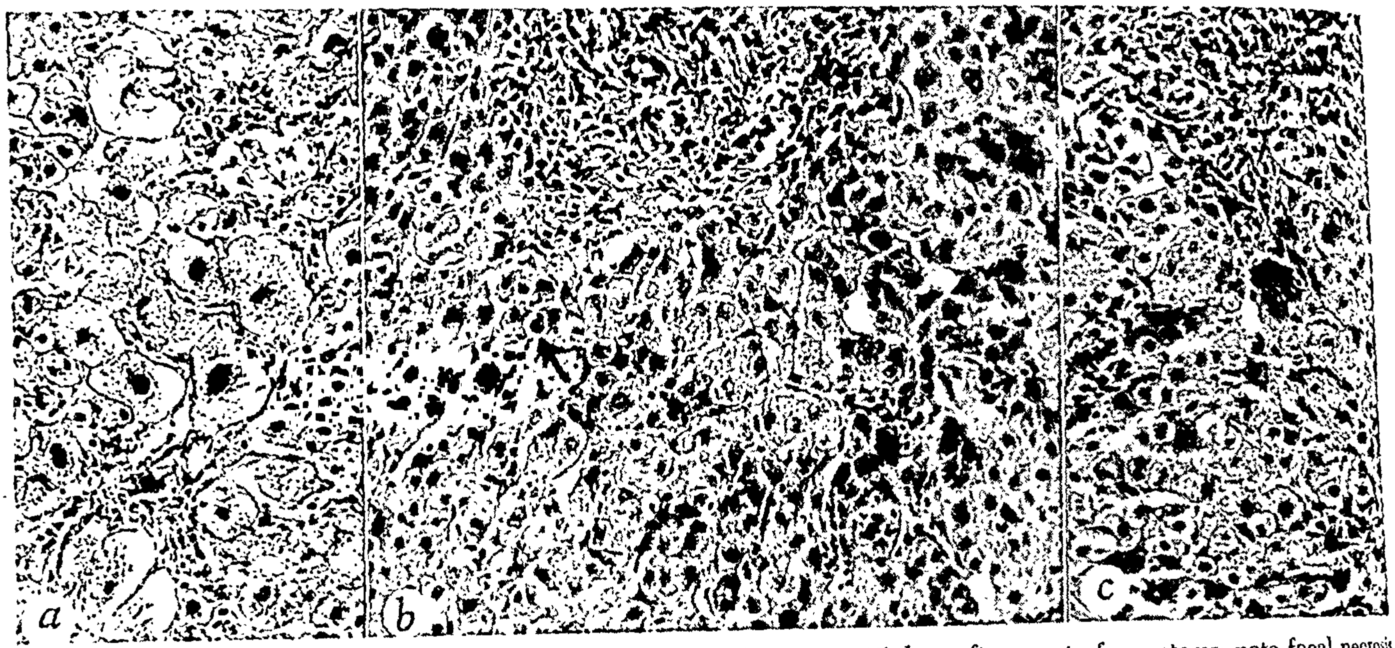

Fig. 1.—Nonfatal hepatitis: *a*, section of specimen removed for biopsy 17 days after onset of symptoms; note focal necrosis and balloon cells (hematoxylin and eosin, X200); *b*, biopsy three weeks after onset of symptoms showed focal necrosis and acidophilic body (*arrow*) (hematoxylin and eosin, X200); *c*, persistent hepatitis, biopsy seven months after first symptoms developed; note focal necrosis and lymphocytes in portal space (hematoxylin and eosin, X200).

The portal tracts are enlarged by increased numbers of lymphocytes, mononuclear and reticuloendothelial cells, and a few eosinophilic leukocytes. This cellular exudate persists longer than any of the other alterations and is probably a reaction to the cellular destruction within the lobule, since the lympatic drainage is in this direction and is apparently greatly increased in hepatitis.[5] Dilatation, bile stasis, budding, or proliferation of interlobular bile ducts does not occur. The minute intercellular bile canaliculi, however, often contain bile plugs.

When the afore-mentioned intralobular changes, that is, individual cell necrosis, focal necrosis with increase of mononuclear and reticuloendothelial cells both focal and diffuse, and the regenerative phenomena, are combined with inflammation of the portal zones, the appearance is typical of viral hepatitis.

In the subsiding phase of acute hepatitis the signs of cellular damage and inflammation diminish, whereas signs of regeneration and restoration of the lobule are predominant. The inflammatory cells persist the longest in the portal tracts, whereas those within the lobule disappear more rapidly. Many of the *Kupffer cells still* contain lipofuscin and, according *to* Smetana,[1d] stasis of bile in the bile canaliculi often becomes apparent during this stage. During this stage diagnosis based on biopsy is much more difficult and errors occur more frequently. Gradually, however, the normal appearance is restored, the exudate in the portal canals fades away, the lipofuscin disappears from the Kupffer cells, and in uncomplicated cases neither scarring nor other signs of previous damage remain.

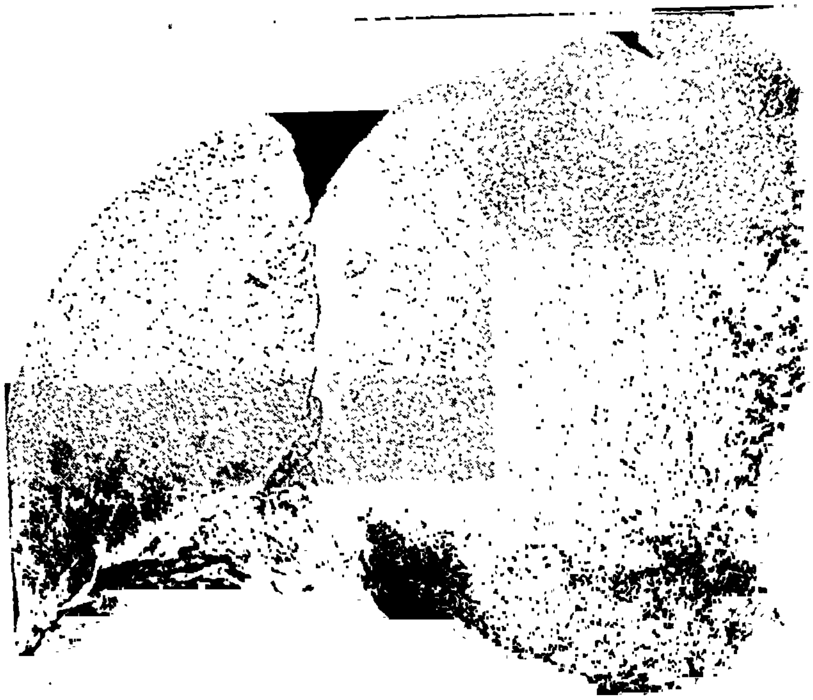

Fig. 2.—Fulminant hepatitis. At autopsy, nine days after onset of jaundice, the liver weighed 830 Gm.

Persistent or Recurrent Nonfatal Viral Hepatitis.—The lesions found in persistent or recurrent nonfatal viral hepatitis vary considerably. A close correlation between the severity of clinical and laboratory findings on the one hand and the histological changes on the other has not been noted. In one group of cases the lesions are fundamentally similar to those in acute infectious hepatitis except in degree (fig. 1*c*). Multinucleated cells are frequently increased in number. The alterations are sometimes so slight that they may be overlooked. In other cases, however, there may be a slight to marked increase in the portal connective tissue and an increase in the number of bile ducts present.

Fulminant Viral Hepatitis

In some cases of viral hepatitis the course is extremely rapid, leading to death within 10 days or less.[6] At autopsy in cases of this type the liver is found to be very small, sometimes weighing in adults as little as 600 Gm. The liver appears smooth or wrinkled, and when it is placed on the table it flattens out (fig. 2). Because the consistency is markedly reduced, the organ can be bent in any direction. The color is not distinctive and varies through shades of red, purple, and brown. The term "acute yellow atrophy" is not descriptive in most of these cases. The cut surface frequently has a "nutmeg" pattern, but in some areas the lobular architecture is missing and a dark-red congested surface has a spleen-like appearance. In a small number the changes are severer in the left lobe.

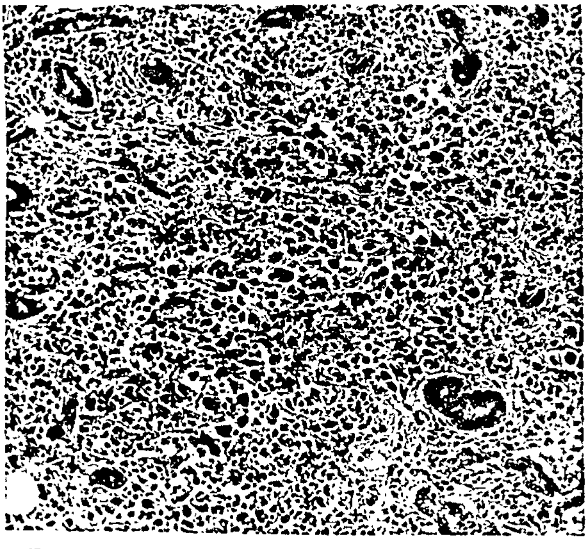

Fig. 3.—Histological appearance in fulminant hepatitis. Note almost total loss of hepatic cells with remnants of cholangioles outlining the lobular periphery (hematoxylin and eosin, X135).

Histologically, almost all hepatic cells have been destroyed and there is an extensive inflammatory reaction (fig. 3). The destruction of hepatic parenchyma may involve the entire lobule; occasionally, however, a narrow band of cells may persist at the lobular periphery. The dead cells apparently are removed rapidly because only small, hardly recognizable products of cellular disintegration can be seen, some of which are engulfed by Kupffer and other phagocytic cells. Inflammatory cells have replaced the parenchymal elements and are most numerous at the lobular peripheries. Within the lobular remnants, inflammation is less prominent and inflammatory cells are gradually replaced by red blood cells. The exudative cells are generally mononuclear forms, reticuloendothelial derivatives, plasma cells, and lymphocytes, but as a rule neutrophilic and eosinophilic leukocytes in relatively small numbers also are present. The venules, both portal and hepatic, generally show evidence of inflammation and there is proliferation of the perilobular and interlobular ductules. In spite of the intense destruction and inflammation, the reticular framework of the liver appears intact and varies little from that seen in normal livers.

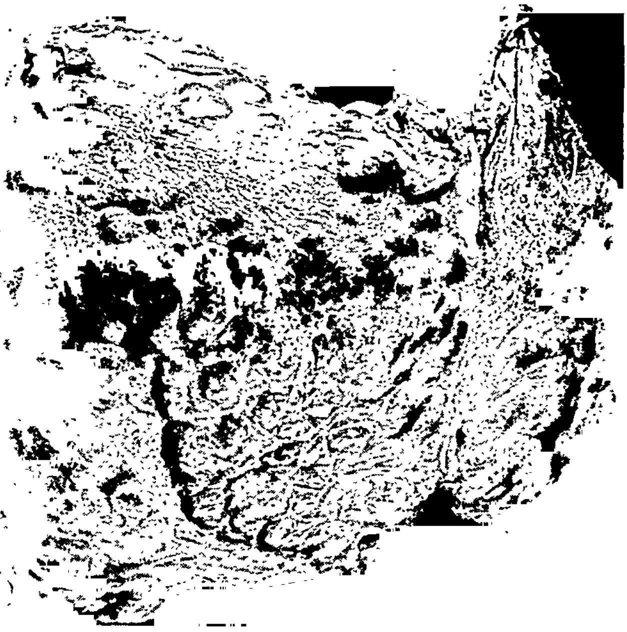

Fig. 4.—Subchronic atrophy. At autopsy, two months after onset, the weight of the liver was 1,135 Gm. Note broad zones of atrophy in right lobe and almost total atrophy of left lobe.

The foregoing accounts have described briefly only the two extremes of hepatic damage resulting from viral hepatitis. At one end of the spectrum the injury was so mild that complete restoration of the hepatic parenchyma took place; at the other end the destruction was so severe that death occurred within a relatively short time. When, however, the injury is too severe for complete restoration to take place and not severe enough to cause death within a few days, a wide variety of hepatic lesions may be observed. Because of the remarkable regenerative power of the liver, any lesion produced in viral hepatitis is never static but immediately subject to alteration by parenchymal regeneration. In the descriptions that follow it is the variation in extent, duration, distribution, and intensity of this regenerative power that is largely responsible for the variety of lesions encountered.

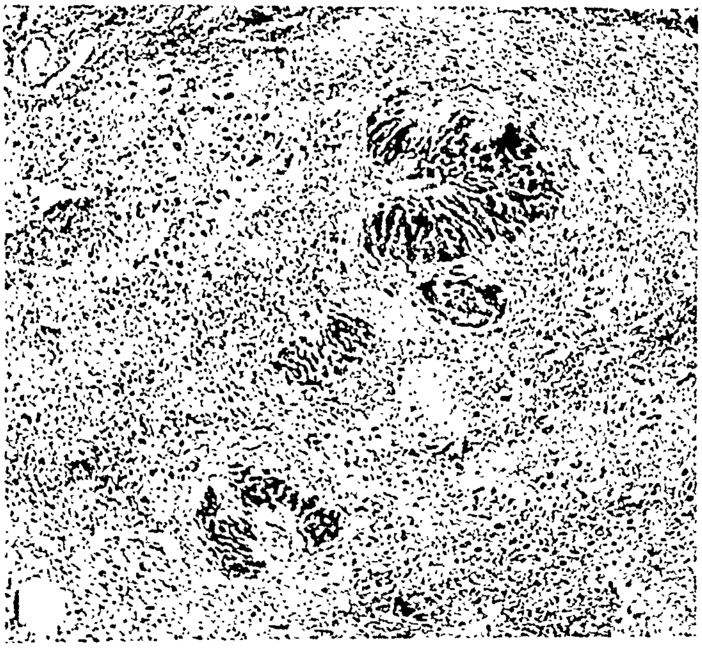

Fig. 5.—Subchronic atrophy. Persistent remnants of regenerating hepatic cells; surrounding lobules are completely destroyed except for bile ducts (hematoxylin and eosin, X25).

Subchronic (Subacute) Atrophy

Grossly the pathological picture varies greatly, depending on the degree of necrosis, collapse, and regeneration. As a rule destruction of parenchyma is severer and regeneration less vigorous in the left lobe (fig. 4). In other cases the greatest degree of destruction may occur near the hilus and may extend out toward the periphery in a fan-shaped manner, with regeneration most prominent at the edges of both lobes. Shrunken and atrophic regions alternate with irregularly outlined green or yellow regions in which the lobular architecture is preserved and with regions of nodular regeneration.

Histologically, the appearance also varies greatly. In regions that appear grossly to have been preserved, foci of acute hepatitis with necrosis of individual cells and focal collections of mononuclear cells may be found, whereas in others considerable necrosis is revealed. In the collapsed regions only ghost lobules remain after almost complete disappearance of the hepatic cells. The boundaries of the lobules in these portions are recognized by the persisting and proliferating perilobular ductules or cholangioles. When necrosis is not quite so extensive, intensive regeneration has resulted in the formation of regenerated masses of various sizes and shapes (fig. 5) up to several centimeters in diameter. The foci of hepatic regeneration are sharply demarcated from the surrounding partially collapsed stroma and can be differentiated from ordinary undamaged intact lobules by the fact that cells within them form laminas two or more cells in thickness and are not radially arranged around a central vein.[7] The new hepatic cells are greater in size, there is variation in staining intensity, and many contain granules of pigment. The nuclei are often large or multiple. Bile thrombi are commonly present in the bile canaliculi. The inflammatory cells are similar to those observed in the fulminant form of hepatitis, and phagocytic cells containing yellow pigment are especially numerous. Inflammation of the walls of the veins is not infrequently observed. The reticular framework remains intact though it may be condensed in places where lobular collapse has occurred.

Posthepatitic Cirrhosis

A sharp line of distinction cannot be drawn between the lesions just discussed (subchronic atrophy, subacute diffuse necrosis, or postnecrotic scarring) and so-called posthepatitic cirrhosis. Some of the former lesions merge almost imperceptibly into the latter condition. For the purposes of this report, however, posthepatitic cirrhosis includes only those cases in which regeneration was more extensive than necrosis and in which regeneration was predominantly nodular; that is, the regenerative process did not produce lobules with normal vascular relationship but nodules without central veins or with veins that were extremely eccentric.[8]

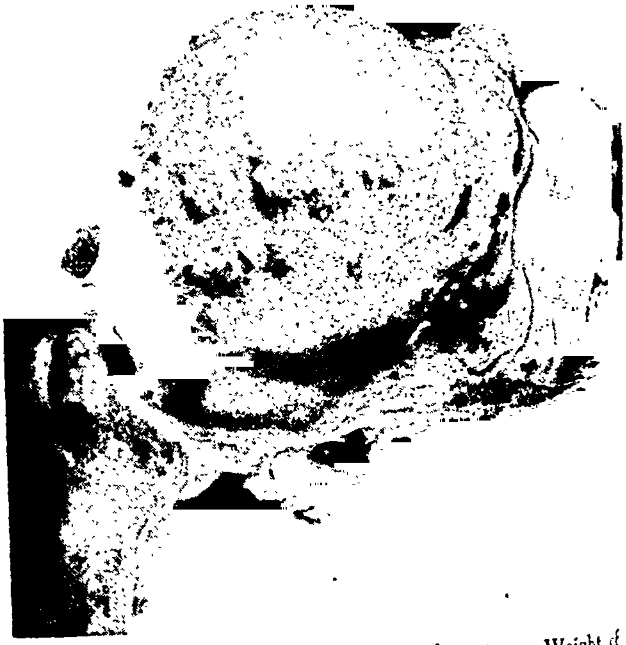

Fig. 6.—Posthepatitic cirrhosis. Lobar type. Weight of liver, 710 Gm. Note large regenerating masses and atrophy of left lobe. Death occurred seven months after onset of hepatitis.

Gross Appearance.—On the basis of macroscopic appearance, Stauffer and I[9] classified our cases of posthepatitic cirrhosis into three groups, namely, lobar, nodular, and granular.

In the lobar group, the nodules of regeneration were extremely large, the normal contour of the liver being destroyed by huge isolated nodules, some of which were the size of hepatic lobes (fig. 6). These large regenerative nodules were separated from each other by deep indentations or by broad zones of atrophy. They were located usually at the periphery of the right or left lobe or were limited almost entirely to the right lobe. The livers in this group were reduced greatly in size and weight.

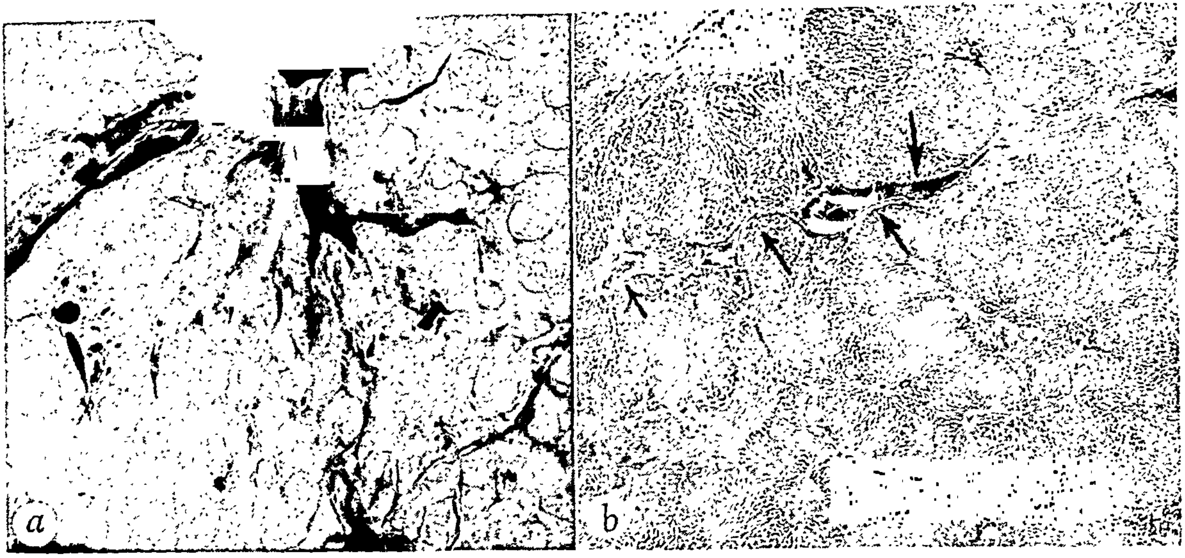

Fig. 7.—Posthepatitic cirrhosis: *a*, nodular type; weight of liver, 1,395 Gm.; cut surface shows regenerative nodules with distortion of veins; death occurred two and a half years after onset of hepatitis; *b*, nodular type; note distortion of veins by regenerative nodules (hematoxylin and eosin, X12).

In the second group, which included most of the cases, the regenerative nodules were not so large and were distributed more diffusely throughout the liver (fig. 7*a*). Although the nodules were separated by zones of atrophy, the zones were not so broad and extensive as were those in the lobar group. The diameter of the nodules varied from 5 mm. to 2 cm. or more. They were generally yellow or green, and the intervening atrophic zones were usually red or gray. The regenerative nodules in both this and the former group revealed many instances of gross distortion of the hepatic and portal veins by small and large nodules (fig. 7*a*). The venous distortion was severest in those cases in which the regenerative nodules were most numerous and close together. Thus, venous distortion was greatest when regenerative activity had been most vigorous. These livers also were reduced greatly in size and weight.

In the third group of cases, the livers were finely nodular or granular. The regenerative nodules in these cases were small, the greatest diameter generally being 0.5 cm. or less (fig. 8). In some cases the nodules were separated widely by broad atrophic zones; in others they were close together with correspondingly narrow atrophic zones.

Histological Appearance: Lobar and Nodular Types.—Sections taken from the regions of nodular regeneration varied considerably in architectural pattern and in the relation of the afferent and efferent veins to the hepatic parenchyma.[10] In sections taken from some of the large nodules of regeneration, the lobular pattern often was partially preserved, insofar as the relationship of the central veins and portal tracts to each other and to the hepatic parenchyma was concerned. These large nodules contained many central veins and portal tracts, indicating that they were multilobular in origin. The portal tracts in some instances were wider than normal and contained increased num-

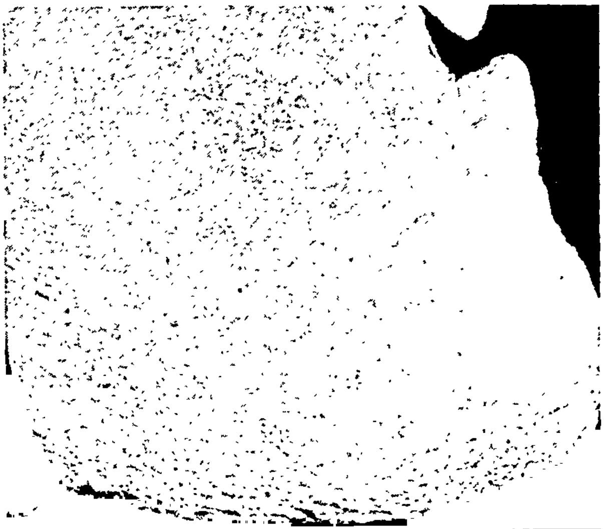

Fig. 8.—Posthepatitic cirrhosis. Granular type. Weight of liver, 1,163 Gm. Death occurred four months after onset of hepatitis.

bers of lymphocytes, phagocytes, bile ducts, and connective-tissue fibers. The regions around the central veins often showed evidence of passive congestion and atrophy. In other instances, however, the portal tracts appeared extremely small, with diminutive blood vessels and tiny bile ducts surrounded by an exceedingly scanty fibrous stroma. Also, these hepatic lobules frequently appeared to be much larger than normal, with wide stretches of hepatic parenchyma separating the afferent and efferent vessels.

In other large nodules, however, the architectural pattern was altogether different, in that the nodule was made up of composite groups of hepatic cells in which the normal relationship between portal tracts and central veins was lost (fig. 7*b*). In these groups of proliferating cells, the central vein often could not be located or, if found, it was eccentric and in close proximity to the portal tracts. These groups of regenerating hepatic cells, which, when found in large aggregates, made up some of the large nodules of the lobar and nodular groups of livers, also were observed as small solitary collections in the granular livers (fig. 9). Because they fail to restore the normal architectural pattern, they no longer can be designated as "lobules" but perhaps are designated better as "regenerative nodules."

The regenerative nodules in many of the livers were not completely formed and, from evidence of cellular regeneration, they appeared to be actively enlarging. Individual hepatic cells were frequently multinucleated and often they were unusually large and contained bizarre, hyperchromatic, and giant nuclei. The cellular proliferation produced laminas that were two cells or more in thickness and was accompanied by the production of a new reticular and sinusoidal framework that did not have the usual orientation to the central vein. The old framework of sinusoids and reticular fibers had collapsed and had been pushed toward the periphery by the new centrifugal growth of hepatic cells.

By a process of condensation, the old framework became scar tissue. According to this concept, the fibrous tissue in cirrhosis represents, to a large extent, the accumulated skeletons of previously destroyed lobules that have been pushed aside by the vigorous regeneration of hepatic cells. Because of the eccentricity of the position and proliferation of these hepatic cells, the central vein comes in time to occupy a position toward the periphery of this new nodule or pseudolobule.

Histological Appearance: Granular Type.—In about half of the granular livers, the regenerative nodules appeared to have achieved as nearly complete development as possible within the bounds of the surrounding collapsed stroma (fig. 9*a*). A certain balance apparently had been achieved between the dynamic expanding growth of the nodule and the passive, yielding, but ultimately compressed stroma that represented the collapsed framework, ducts, and vessels of previously destroyed lobules or portions of lobules. The gross and histological features in these granular livers were identical with those observed in so-called alcoholic, or Laennec's, cirrhosis.

In the remaining livers of the granular group, hepatitis was still active, with continuing destruction of hepatic cells and relatively broad zones of atrophy between tiny and incompletely developed regenerative nodules (fig 9*b*). Inflammation of veins was generally present, whereas infiltration with fat was mild or absent. Consequently, although these livers were grossly granular, they did not present the histological characteristics of alcoholic cirrhosis.

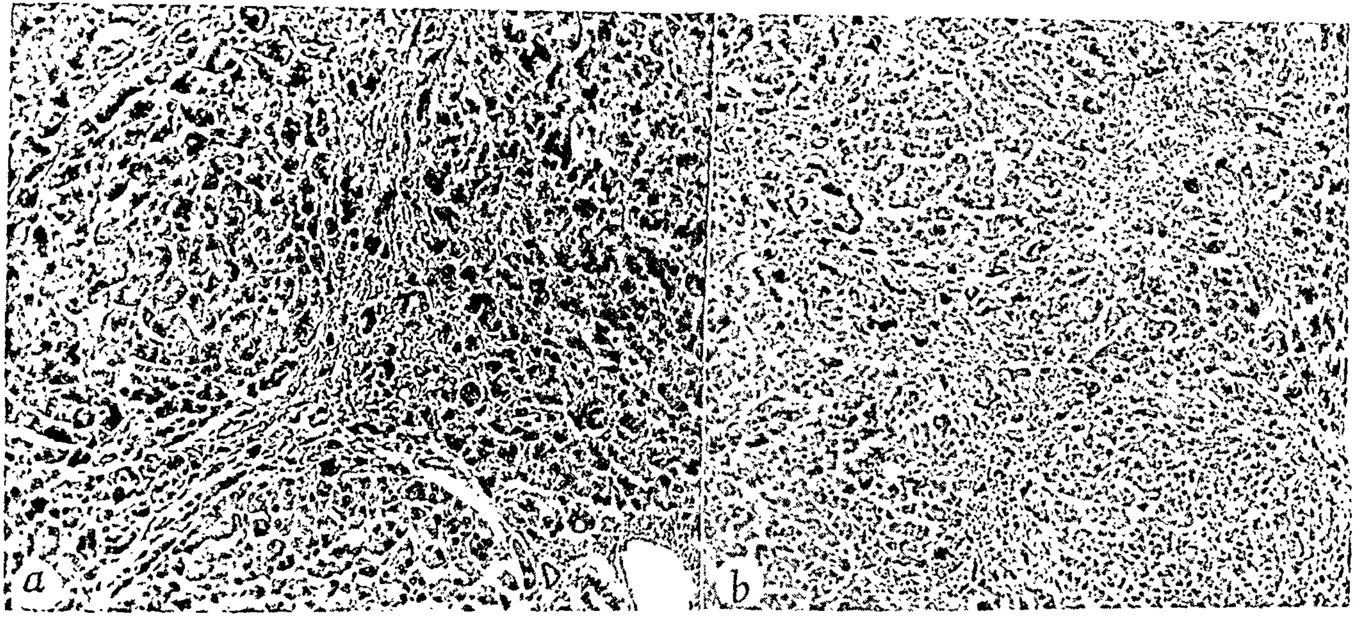

Fig. 9.—Granular type of posthepatitic cirrhosis: *a*, small well-developed regenerative nodules resembling Laennec's cirrhosis (hematoxylin and eosin, X100); *b*, small incompletely developed regenerative nodules (hematoxylin and eosin, X65.)

Changes in Stroma.—The atrophic internodular regions presented a variable histological appearance, dependent to a large extent on the elapse of time since the acute attack. If the disease was of relatively short duration, sections of the internodular zones revealed large numbers of bile ducts and ductules, lymphocytes and plasma cells, and smaller numbers of polymorphonuclear cells, in addition to vessels. Branches of the portal or hepatic veins often revealed evidence of mild inflammation, as indicated by the presence of lymphocytes in their wall. Most of the connective tissue in these atrophic internodular zones consisted of the remnants of the collapsed reticulum of previously destroyed lobules. Formation of new connective tissue, as indicated by the presence of fibroblasts and collagenous fibrils, appeared to be minimal in most of these livers. In disease of longer duration, there was evidence of compression of the internodular stroma by the growth of the regenerative nodules, and transformation of some reticular fibers into thicker collagenous fibrils appeared to have taken place.

Changes in Blood Vessels.—Of particular interest in this dynamic process of destruction and repair is the fate of the preexisting vessels. I already have called attention to the gross and microscopic distortion of the portal and hepatic venous radicles produced by the nodules of regeneration. In order to study this process in greater detail, Kelty and co-workers[11] made a glass-plate reconstruction of serial sections taken from a liver that was the site of postnecrotic cirrhosis. From this glass-plate reconstruction, it was possible to make a wax model that clearly demonstrated the compression and distortion of radicles of the hepatic veins and related the compression not to fibrous connective tissue but to growth of the regenerative nodule. This work has been confirmed by Popper and associates.[12]

Another method, namely, the vascular injection of vinyl acetate and subsequent corrosion of the injected specimen, was used at the clinic by Mann and co-workers.[13] It also illustrated the distortion of the vascular bed by the regenerative nodules. The expanding growth of the regenerative nodule compresses the surrounding vessels into a basket-like network. It was not possible by this method to demonstrate shunts between radicles of the hepatic artery and vein; however, shunts between the portal vein and the hepatic vein were relatively easy to demonstrate and emphasized the fact that the regenerative nodules are at a definite circulatory disadvantage with regard to perfusion by portal blood. This may be a partial explanation of the frequently seen ischemic necrosis in regenerative nodules. The imperfect blood supply of the regenerative nodule also may explain in part the progressive nature of cirrhosis and the functional failure that occasionally develops long after the viral infection itself has disappeared.

The lesions of postnecrotic or multilobular cirrhosis provided ideal material for the demonstration that distortion of vessels unquestionably occurs in this variety of cirrhosis. The principle illustrated by this phenomenon has a much broader application, however. The observations of my colleagues and me[9] suggested that the same distortion which we demonstrated in vessels large enough to follow in serial-section reconstructions and in vascular-injection and corrosion methods also occurs to each tiny central vein in alcoholic cirrhosis. It is probable, from the hemodynamic point of view, that the com-

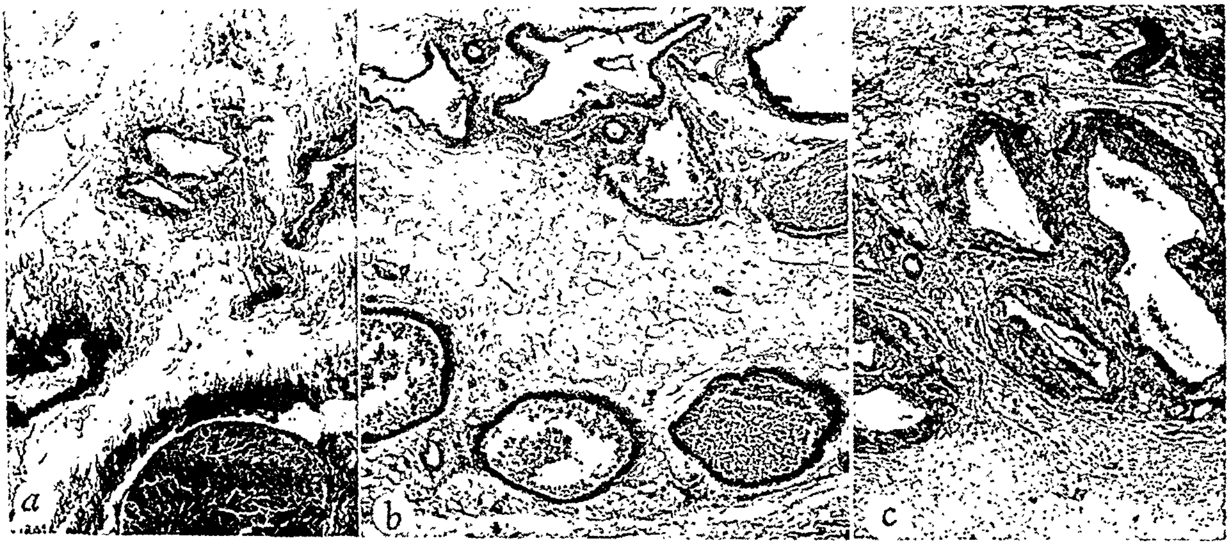

Fig. 10.—Lymphatic vessels at hilus of liver: *a*, lymphatic vessels in a man who died suddenly of a head injury; total number was 19 (hematoxylin and eosin, X32); *b*, lymphatic vessels in a case of subacute viral hepatitis; total number was 75; note large size of vessels (hematoxylin and eosin, X32); *c*, lymphatic vessels in a case of posthepatitic cirrhosis; total number was 100; note large size and thick walls (hematoxylin and eosin, X32).

pression of the sinusoidal bed and the distortion of the myriads of central veins which occur when regenerative nodules replace destroyed lobules are of much greater importance in the pathogenesis of portal hypertension than is the distortion of larger vessels. The destruction and distortion of the vascular tree at the termination and at the beginning of the portal and hepatic-venous systems, respectively, are believed to be of great significance in the development of portal hypertension.

Effects of Cirrhosis on Hepatic Lymphatic Vessels.—In addition to studying the effects of posthepatitic cirrhosis on the capillary and venous bed and its relation to portal hypertension, my associates and I also have been concerned with the effects of cirrhosis on the lymphatic vessels, particularly in relation to the presence or absence of ascites.[5] It is notoriously difficult to study or even locate the lymphatic vessels in either normal or diseased livers. It has been shown, however, that the deep lymphatic vessels of the liver follow the course of the portal veins and bile ducts and drain toward the hilus of the liver, and it is considered generally that the predominant flow of lymph from the liver is in this direction. Consequently, Cain and I[5] considered that a study of the lymphatics at the hilus of the liver might give some information regarding disturbances of flow of lymph within this organ.

In order to obtain an idea of the variations to be expected in number and size of lymphatic vessels, cross sections of the hepatoduodenal ligament were studied in 100 consecutive routine autopsies in which ascites was absent. The mean number of vessels was 34.

A fairly good idea of the normal perhaps can be obtained from observations in two cases in which death occurred accidentally and in which disease processes were not observed during life or at autopsy. A 33-year-old man died of cerebral hemorrhage shortly after a blow on the head during a fight, and a 54-year-old woman drowned. The lymphatic vessels in these two cases were small and numbered 19 and 33 respectively (fig. 10*a*). It is interesting to compare these with obviously abnormal lymphatic vessels in a case of subacute viral hepatitis; 75 lymphatic vessels were present and they were remarkably dilated, containing large numbers of inflammatory cells in the lumens (fig. 10*b*).

We have now studied the lymphatic vessels in 15 cases of postnecrotic cirrhosis with ascites, and in all but 2 cirrhosis was posthepatitic in origin. The mean number of lymphatic vessels in cross sections of the hepatoduodenal ligament at the hilus of the liver in these cases was 62. The lymphatic vessels in a case of posthepatitic cirrhosis are illustrated in figure 10*c*. Dilatation and hypertrophy of the walls of the lymphatic vessels are apparent.

The significance of these observations is not yet clear and the studies are being extended. However, it appears that the lymphatic vessels draining the liver are greatly increased in size and number in both viral hepatitis and cirrhosis. The additional vessels probably represent the opening of potential channels that were not seen in the control sections at the magnification used. Their presence probably reflects a great increase in the formation of hepatic lymph in these conditions, thus corroborating experimental studies on hepatic lymph in injury and cirrhosis of the liver in animals.[14] The increased lymphatic drainage in viral hepatitis probably results from destruction of tissue and sinusoidal damage; venous stasis and portal hypertension[15] probably also play a part in posthepatitic cirrhosis.

Summary and Conclusions

Injury to the liver due to viral hepatitis may vary in form from minor lesions which can hardly be perceived histologically to massively destructive lesions which cause death in a few days. Fortunately, in most cases of viral hepatitis, the damage, even if severe, is not permanent. In the vast majority of cases the vigorous regenerative power of the liver results in reconstruction of the normal lobular pattern. Occasionally, however, the damage may be so extensive that complete restoration of the preexisting structure is impossible. When death does not occur during this acute phase, variable amounts of parenchymal regeneration take place. Because regeneration under these conditions is usually nodular rather than intralobular, the normal vascular arrangement is altered profoundly, with severe compression and distortion of the small veins and the capillary bed. This leads to interference with both portal and hepatic venous flow, which probably is an important factor in the development of portal hypertension. The development of intrahep shunts between the portal radicles and the hep veins places the regenerative nodule in a precari position with regard to adequate circulation may contribute to the progression of the cirrh in the absence of further viral infection.

Both viral hepatitis and posthepatitic cirrh are associated with pronounced increase in size and number of lymphatic vessels draining liver. Destruction of tissue and capillary draina in viral hepatitis are probably responsible for creased formation of lymph, whereas venous sta and portal hypertension probably are additional fa tors of importance in posthepatitic cirrhosis.

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MANAGEMENT OF SOMATIC COMPLICATIONS IN PSYCHIATRIC PATIENTS

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Modern drugs have made the psychotic patient more amenable to treatment not only for his mental illness but also for coincident somatic disease. The author's experiences have shown that some otherwise negativistic patients respond to various forms of physical therapy. This includes the active and passive forms of therapeutic exercise, which have sometimes had strikingly beneficial effects. These are well illustrated in cases of catatonia in which patients frequently develop edema, contractures, and epidermophytosis as a result of prolonged immobility in peculiar postures. Physiatrists should not avoid contact with psychiatric patients. A favorable relationship can generally be established, and the foremost requirement is judicious patience. It is helpful to have the patient observe the treatment being applied to other patients. With rare exceptions, psychiatric patients with somatic ailments can be treated successfully.

Even though 54% (750,000) of the hospital beds in the United States are occupied by psychiatric patients, there have been few comprehensive studies of somatic pathology in the mentally ill. In general, these patients are subject to the same physical diseases that occur in the nonpsychiatric population (a notable exception, in my experience, has been the rare incidence of rheumatoid arthritis in schizophrenics). Extensive use of tranquilizing drugs in the last few years has produced occasional complications. In this presentation, however, I am primarily interested in certain somatic conditions which are usually consequences of abnormal behavior and which can be effectively treated by physical agents.

With greater emphasis upon the establishment of psychiatric pavilions in general hospitals, the staff physiatrist finds himself increasingly confronted with medical problems in the mentally ill. The specialist in physical medicine should also be qualified to act as consultant to the professional staff of our psychiatric hospitals. While the procedures that are used in the treatment of general medical problems of the mentally ill in a physical medicine and rehabilitation department are not unique, it is important that the physician be familiar with the existence and the therapeutic approach to those conditions which can be considered as "prevalent" in

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Read before the Section on Physical Medicine at the 106th Annual Meeting of the American Medical Association, New York, June 5, 1957.

these patients. Furthermore, the success of the therapeutic program in such situations frequently depends upon the art and science of interpersonal relationships. It is the purpose of this paper to discuss briefly the management of some of these somatic complications as well as the attitudinal approach to the patients themselves.

Somatic Complications

Thanks to modern therapies and drugs which have supplemented materially the armamentarium of the psychiatrist during the last decade, there has been an extraordinary change in the picture presented by the acutely ill psychotic patient. Nevertheless, we still observe aberrant behavior in these patients, frequently exhibited in stereotyped postural patterns. As a result of habitual prolonged immobile upright stance and general inactivity these patients often develop static edema of the feet. In some instances the edema is complicated by superimposed dermatitis and cellulitis. While under normal circumstances it may be difficult to treat this condition, it becomes even more so in the regressed negativistic patients, basically because they refuse to carry out prescribed active exercises to improve their peripheral circulation. We have found that these same patients will readily accept activities of a passive nature such as riding a motor-driven bicycle. The results of this therapy have been gratifying, and at times dramatically so.

An illustrative case is that of a man, aged 60, who suffered from edema and dermatitis of both legs. This condition had persisted for about 10 years. The left leg was much more severely involved. The patient had been treated with numerous dermatological preparations but, except for occasional brief periods of partial decrease of edema, there was no significant improvement. When the patient was referred to the physical medicine department, the size of the left leg was about twice its normal size.

After two months of daily passive exercises on a motorized bicycle, the change was so marked as to cause the ward physician to record the following progress note: "The clearing of his chronic eczema, edema, periodic cellulitis, and exfoliation is phenomenal . . . the intractable cellulitis, thrombophlebitis, and stasis edema which have characterized the patient's clinical course over a long period of time have completely subsided."

Another, perhaps not as frequent but much more serious, complication due to poor postural attitudes is the development of contractures of the hands which occur predominantly in catatonic schizophrenic patients because of their characteristic position of body flexion with fists tightly clenched. This postural configuration has been interpreted by some psychoanalysts as an unconscious wish to return to the protective environment of mother's womb. Although definitive therapy has not been completely satisfactory, considerable improvement has occurred after the use of a combination of ultrasound therapy, stretching, exercises, and immobilizing techniques.[1] It is the primary responsibility of the physiatrist, however, to educate the psychiatric staff as to the importance of preventing this condition through organized programs of exercises and activity participation.

A condition still seen occasionally in closed psychiatric wards is ecchymosis and edema of periorbital tissues (the ordinary "black eye"). Because of the discomfort due to pain and the effect of the cosmetic appearance upon the patients, personnel, and particularly relatives, it is desirable to treat this condition promptly. Physiatrists and physical therapists working in psychiatric hospitals are familiar with the effectiveness of galvanic current in accelerating the absorption of the extravasated blood. The occurrence of ecchymosis may be prevented if this treatment is applied within 15 or 20 minutes after injury.[2] Positive galvanism is used to comfortable tolerance of the patient if he is in good enough contact with reality to report excessive current irritation. The usual dosage ranges between 5 and 8 ma. for 20 minutes twice daily. I have used this treatment for about 12 years and have found it highly satisfactory. It achieves the desired effect within days as compared to weeks in untreated cases. This method of treatment of ecchymosis of the eye and of other tissues deserves more attention than it has received.

Another condition prevalent among the hospitalized psychiatric population is epidermophytosis of the toes, or "athlete's foot." This is not surprising, in view of the failure of these patients to follow proper sanitary practices and to complain about their discomfort. The use of potassium permanganate soaks prescribed by many physicians is not desirable on a psychiatric service because of need of special supervision due to the toxicity of the solution and to the staining of linen. Cupric (copper) sulfate iontophoresis is, in our experience, the most effective treatment for this type of infection. A 1% solution is used three times weekly and usually for three or four weeks. Good results have been obtained even in severe cases which stubbornly resisted other medical treatment.

The physiatrist is called upon to assist in special problems of differential diagnosis between nerve lesions and the paralyses of symbolic psychogenic (hysterical) origin which occur among neuropsychiatric patients. Electrodiagnosis is very helpful in such cases. More difficult, sometimes, is the differentiation between severe hysteria and the inert behavior of a regressed schizophrenic. However, regardless of the diagnosis, the physiatrist has the responsibility of maintaining muscle tone and of preventing atrophy of disuse as well as the development of contractures. Various physical modalities may be required to achieve this, e. g., effleurage, passive range of motion, and motorized equipment.

It is even possible to have the patient participate in active and *resistive exercises* when, under the influence of certain drugs such as intravenous therapy with amobarbital (Amytal) sodium, he is able to do so temporarily.

I recall a patient whose psychosis prevented him from voluntary participation in even the basic activities of daily living. Although not "physically" disabled he was completely bedridden. For many months we persisted in treating him on a sustaining basis to prevent the complications mentioned above. Although at the time the prognosis appeared to be hopeless, our efforts were well compensated when the patient eventually walked out of the hospital under his own power instead of in a wheel chair. This remarkable recovery was not due to any drugs or shock therapies but to an intensive psychotherapeutic relationship with a female physician who utilized the principles of Rosen's direct approach technique.[2A]

Attitudinal Approach

In the proper care of his patients, the physician utilizes not only his technical knowledge but also his skill in interpersonal relationships. The latter becomes especially significant when one is dealing with the mentally ill.[3]

Many physiatrists tend to avoid contact with psychiatric patients, especially the psychotics. They are unaware, perhaps, that the negativistic disturbed mental patient frequently becomes cooperative and amenable to treatment when physically ill. In many cases, successful treatment depends upon the proper attitude of the physician and therapist to the patient. The concept of a specific approach has been explored in the psychiatric literature and was specially emphasized by the Menninger school, which refers to it as "attitude therapy." This, however, necessitates a thorough understanding of the psychodynamics of the individual patient and would probably be beyond the scope of the average physiatrist. There are, however, some principles in a therapeutic relationship with mental patients the knowledge of which can be helpful to the physician. Perhaps the foremost requirement in such a relationship is merely judicious patience. There is a *strong compulsion* to send the resisting patient back to his ward with a note that he cannot be treated because of noncooperation. With rare exceptions these patients can be treated successfully. Sometimes it is necessary to allow them to remain in the clinic during their first visits while no direct attempt is made to administer treatment. A favorable relationship with such a patient can be more easily established by avoiding all reference to the therapeutic procedure. When this is accomplished, the patient will usually allow the therapist to carry out the indicated prescription. It is also helpful to have the patient observe the treatment applied to other patients in the clinic. Very often an investment of a few minutes of the physician's time talking to the patient may pay gratifying dividends in terms of the patient's change of behavior. If a patient reacts with a tirade and hostility when a specific subject is mentioned, it is best to change the topic immediately and to direct his attention to other matters.

Not too long ago we were asked to treat a 60-year-old patient with chronic brain disease who had been confined to bed or wheel chair for months because of an acquired deformity of the feet. Any attempt to approach the patient had been met with a violent explosion of choice epithets. One of our physical therapists was able, over a period of time, to establish a good relationship with the patient, who became most cooperative and allowed himself to be treated with resultant marked improvement. Furthermore, this relationship was highly instrumental in reversing his aggressive behavior pattern.

It is not often that the patient's delusional ideas are referrable to clinical apparatus. When the paranoid patient expresses such ideation, the uninitiated therapist may seek to disprove it by offering arguments of indisputable logical validity. Needless to say, this approach will serve no purpose whatever except to make matters worse. It is sometimes necessary to offer a substitute modality, at least until such time as the therapist-patient relationship may serve to modify the patient's suspicions.

Consideration of safe dosage presents a special problem in the treatment of psychotic patients. The subjective tolerance of the patient may not be a satisfactory guide. Treatments, therefore, must be often given within ranges known to be reasonably safe. Paradoxically, caution must be exercised even with patients in good contact with reality. I recall one young man who in the course of treatment received an electrical burn of the nose. When the therapist asked the patient why he did not report the discomfort, the reply was, "I thought the hotter it felt the better!"

Summary

In spite of the fact that mental patients occupy more hospital beds than all other patients combined, comparatively little attention has been paid in the literature to somatic diseases in these patients. As a general rule, the physical ailments of the patients in psychiatric hospitals do not present any unique variations. Some of these conditions should be of special interest to the physiatrist because they can be considered as "prevalent" in psychiatric patients and because they respond to treatment by physical agents. Postural contractures of the fingers, static edema of the feet, epidermophytosis of the toes, ecchymosis of periorbital tissues, and atrophy of disuse are some of the somatic complications we frequently see in hospitalized psychiatric patients.

Even acutely ill mental patients are in most instances amenable to treatment of their somatic

complications, provided a proper attitudinal approach is exercised. With increasing integration of psychiatric services in general medical hospitals the physiatrist is more frequently faced with requests for treatment of somatic conditions in the mentally ill. The specialist in physical medicine should be familiar with some of the problems involved and their management.

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EXPLAINING TO THE PATIENT

A THERAPEUTIC TOOL AND A PROFESSIONAL OBLIGATION

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Perhaps the commonest criticism of the physician of today is a seeming lack of sympathetic interest in his patients. The public is cognizant of the advantages of scientific diagnosis and treatment, but it takes these more and more for granted and desires in addition personal attention comparable to that given by the family doctor of the past. Because there is a desire in each of us to be recognized as an individual, no one enjoys being looked upon solely as an example of a particular disease or syndrome. Furthermore, people come to their doctors because of concern about their symptoms, and their anxiety is seldom allayed unless the physician takes the time to hear the complete story, perform an examination, and then explain the illness and its general prognosis. The aim of the physician always should be to include in every consultation as much practical information as may be of use to the patient.

Standard textbooks of medicine supply excellent articles on recognized diseases, but with rare exceptions the discussions fail to include one feature of paramount importance. No mention is made of the need for explaining to the patient the nature of his problem, the mechanism and significance of his symptoms, and the course the illness may be expected to follow. This omission is unfortunate because, with present-day concentration on pathologic physiology in our medical schools, the subject also receives little or no attention in clinical teaching. As a consequence it may be several years after graduation before a young internist appreciates all that can be accomplished by sufficiently detailed instruction of those under his care. There are two principal reasons why an explanation along the lines indicated is indispensable. In the first place, it is, in many illnesses, a therapeutic tool of basic importance. Secondly, it is one of the best available ways to show personal concern for the patient's welfare and therefore a most effective method for maintaining public support of our free enterprise system of medicine.

Explanation as a Therapeutic Tool

There are many diseases in which the difference between a satisfactory and a poor therapeutic result is determined by the care with which the patient carries out the recommended program of treatment. Attention to details may gain years of comfortable and productive life, and whether or not a person cooperates to the extent required usually depends on whether or not he understands the need for the measures advised. Among the many disorders to which these statements apply are coronary heart disease, congestive heart failure, persistent atrial fibrillation or flutter, pulmonary tuberculosis, emphysema of the lungs, diabetes mellitus, myxedema, gout, and

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From The Cleveland Clinic Foundation and The Frank E. Bunts Educational Institute.

Chairman's Address read before the Section on Internal Medicine at the 106th Annual Meeting of the American Medical Association, New York, June 6, 1957.

Addisonian pernicious anemia. In psychosomatic problems also, and in much of preventive medicine, proper instruction of the patient is of essential importance. There is not time to discuss the role of explanation in all of these conditions, but I should like to review a few examples.

Angina Pectoris.—There is no statistical evidence that the prognosis of angina pectoris is affected significantly by drug therapy. Treatment, therefore, is directed principally toward protecting the patient from habits, activities, and emotional situations which increase the hazards of the syndrome. In the effort to accomplish this, chief reliance is placed on informing the person as fully as possible concerning his illness. This requires thorough discussion of the pathogenesis of the symptoms and detailed instruction concerning the mode of action of the various factors which may induce attacks. Reasons should be given for weight reduction in overweight persons, avoidance of overeating, resting after meals, and abstaining from tobacco. The possible aggravating effects of cold weather should be pointed out, and snow shoveling in particular must be prohibited. Emphasis is placed on the importance of avoiding the seizures, but at the same time reasonable assurance is given as to the patient's relative safety so long as he remains free from pain. Mention also should be made of the possibility that with time an effective collateral circulation may develop and bring with it an appreciable improvement in exercise capacity. A talk along these lines places the problem in its true light and often greatly reduces the patient's apprehension. This in turn may result in a considerable diminution in the frequency of the attacks.

Every person who has angina pectoris should be instructed to stop all activities and stand still upon the first appearance of symptoms and to take a tablet of glyceryl trinitrate (nitroglycerin) sublingually if rest alone does not give prompt relief. An occasional patient hesitates to employ this drug either because it causes unpleasant symptoms or because of a mistaken idea that it may have injurious effects. The first of these objections can be forestalled by a brief description of the possible side-effects, with stress on their harmlessness, and the second can be overcome by assurance that the repeated use of the preparation is not detrimental in any way. A reminder should be given, however, that even though glyceryl trinitrate is not harmful a person is not thereby excused from exercising every possible precaution to avoid attacks.

Myocardial Insufficiency and Congestive Heart Failure.—Explanation to the patient also is of primary importance in the treatment of congestive heart failure and other states of impaired myocardial reserve. Regardless of the type of underlying heart disease there must be careful instruction in the nature of the problem and the principles of long-term management if the best possible results are to be obtained. The general concept of myocardial reserve and the significance of dyspnea and other symptoms should be reviewed in understanding terms. One of the commonest reasons for recurrences of cardiac decompensation is failure on the part of the patient to observe the necessary degree of sodium restriction in the diet. A simple discussion of the role of sodium in water retention will usually insure against lapses of this kind. Certain people object to taking digitalis because they erroneously regard it as a heart stimulant employed only late in the course of cardiac disease, and there are others who, contrary to directions, will discontinue its use after having been restored to a state of comfort. These errors can be prevented by a brief description of the effects of the drug on the efficiency of the myocardium and, in atrial fibrillation, on the ventricular rate.

Psychosomatic Disorders.—In persons suffering from nervous tension or anxiety an explanation of the mechanism of the symptoms may result in great improvement even though the underlying source of tension cannot at the moment be identified or corrected. A common problem for general practitioners, internists, and cardiologists is that of sticking or aching precordial pain which has been diagnosed by the patient or by a hurried physician as due to angina pectoris. The exact mechanism of the discomfort is not known, but that it is not evidence of organic heart disease is well established. The pain is not retrosternal in location and does not radiate to that region. At times, however, it spreads upward toward the left shoulder and even down the left arm, usually along the lateral aspect. The sharp, or sticking, variety may be of no more than momentary duration, but the dull or aching type and that which is described as a sense of heaviness frequently lasts for hours at a time. The discomfort is not induced by physical activity but may develop after a period of exertion. Rest and glyceryl trinitrate fail to give prompt relief. A careful history and physical examination followed by assurance that the pain is arising in the chest wall and is the result of fatigue or emotional tension often results in prompt improvement or complete relief. It is essential that there be a positive explanation of the distress. A statement that there is no heart disease without further elaboration leaves many questions unanswered in the patient's mind and seldom convinces him of the harmlessness of his symptoms. Many persons who have a problem of this kind have the impression that a reliable opinion cannot be given until after roentgenologic and electrocardiographic studies, and it therefore is advisable in the process of explaining the symptoms to mention the lack of need for examinations of this kind. If, after this, one detects evidence of lingering doubt, no matter how slight, an offer should be made to have the studies

HEMANGIOMAS—TREATED AND UNTREATED

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There are three common types of vascular nevi; namely, the capillary hemangioma (port wine stain), hemangioma simplex (strawberry mark), and the cavernous hemangioma. Spontaneous involution may occur. There is also the tendency for some hemangiomas to grow very large and to become ulcerated. If ulceration occurs, sepsis as well as cosmetic defects may ensue. Delay in starting treatment while waiting for spontaneous involution may provoke serious problems. The cosmetic appearance of the treated site is usually the most important consideration, and, accordingly, early institution of treatment and the prevention of secondary infection are recommended.

One of the first questions the mother of a newborn infant asks invariably concerns the presence of birthmarks. The mother may be assured that her newborn baby has none, and yet in the first few weeks of the baby's life it is not unusual that vascular nevi may make their appearance. These vascular nevi present at birth or shortly thereafter are not only of great concern to the parents but also to the physician. The latter is faced with the responsibility of advising the parents as to the proper management of vascular nevi. In view of the divergent opinions of competent physicians in regard to the spontaneous involution of hemangiomas, the attending physician is faced with a difficult problem as to whether or not a particular hemangiomatous lesion should be treated.

Clinical Types of Angiomas

Clinically, there are three common types of vascular nevi, namely: the capillary hemangioma (port wine stain), hemangioma simplex (strawberry mark), and the cavernous hemangioma. These three types can be differentiated clinically with considerable ease. The port wine stain does not offer a problem in management, for there is no effective treatment as yet. Some of these lesions will lighten considerably, especially those located on the forehead. Other port wine stains will tend to grow darker and assume a purplish hue with small vascular nodules when the patient is an adult. Port wine stains are not sensitive to radiation therapy, although superficial roentgen rays, grenz rays, and thorium X have been claimed to produce some paling of the lesions. Tattooing of the lesions with suitable pigments is at the present the most promising essay at improving the cosmetic appearance of the lesions. Also, cosmetic preparations which effectively cover the port wine stains are available.

Simple and cavernous hemangiomas present difficult problems in regard to management. Spontaneous involution of both types has been documented in numerous cases. Lister,[1] Watson and McCarthy,[2] Hopkins,[3] Ronchese,[4] Wallace,[5] Modlin,[6] and Falk and Levy[7] are among those reporting disappearance of untreated hemangiomas of the simple and cavernous type. These undeniable findings affirm the belief of many physicians that all hemangiomas should be left alone and that within five years involution of the lesions will take place.

On the other hand, the attending physician i faced with several disturbing potentialities shoul he decide to await spontaneous involution of simpl or cavernous hemangiomas. Most lesions are smal as they are seen at birth or shortly thereafter, an it would then be simple to treat effectively thes so-called insignificant lesions. Since the physicia is armed with the knowledge that most of thes lesions will involute spontaneously, he is tempte to regard all lesions as insignificant. However many of the large ulcerated extensive lesions star as small ones which would at the beginning len themselves to effective, uncomplicated, and saf treatment. Many of these will not involute spontaneously but, on the contrary, will tend to grow, sometimes rapidly. Other lesions will persist with growth proportional only to the normal development of the child.

The tendency for hemangiomas to become ulcerated occurs with some frequency. If ulceration occurs, cosmetic defects after the healing of the ulceration become a problem, especially if this takes place on the face, arms, and chest. More disturbing than the consideration of cosmetic defects is the fact that serious infections may result with impairment of the function of the involved area. The physician is also faced with the fact that once the lesions have been allowed to become enlarged therapy will be more difficult. Moreover, the cosmetic result will be inferior to that of therapy when

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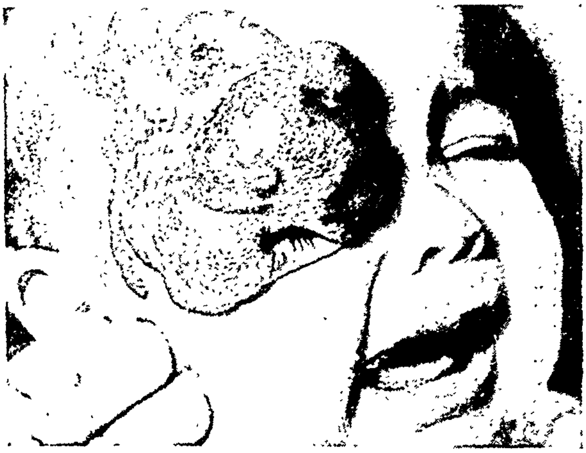
Read before the Section on Dermatology at the 106th Annual Meeting of the American Medical Association, New York, June 6, 1957.

the lesion is still small. It is generally conceded by most dermatologists that the earlier angiomas are treated the better the result.

Study of Patients with Angioma

This report concerns the study of 1,113 available charts of patients with the diagnosis of angioma seen at the Columbia Presbyterian Medical Center between 1932 and 1955. These patients were seen and, in some cases, treated in the departments of pediatrics, dermatology, plastic surgery, or radiology. The study includes no cases seen or treated by us in our own private practice. It concerns the various types of treatment administered for angiomas at the Columbia Presbyterian Medical Center. A special effort was made to scrutinize especially those cases in which there was no treatment. It is generally believed that if spontaneous involution is to occur it will take place in the first five years of the patient's life. On this basis, another part of this study limited itself to those cases in which patients, with the diagnosis of angioma, were *first* seen at 5 years of age or over, having had no previous treatment.



Cavernous hemangioma of upper eyelid and temple at age 7 months. This began as a 0.5-in. lesion over the right eyebrow at birth and increased to present size with ulcerations awaiting spontaneous involution.

In the study the angiomas were designated in the following manner: hemangioma simplex (strawberry mark), hemangioma cavernosum, nevus flammeus (port wine stain), lymphangioma circumscriptum, and nevus araneus (spider nevus). In table 1 the number of patients seen with various types of angiomas are shown. In addition to the above clinical diagnoses with their corresponding number of cases, the unusual forms of blood vessel tumors as well as hemangioma-like lesions are listed.

Of the 329 patients with hemangioma simplex, 74 had multiple lesions. Of the 584 cases of hemangioma cavernosum, 103 patients had multiple lesions. In the analysis of these cases, the multiple lesions were regarded as one for the sake of simplicity. Of the 1,113 cases, 710 (64%) were females.

Treated Angiomas and Cosmetic Effects

Nevus flammeus, as already mentioned, cannot be successfully treated in most instances. Any improvement noted in this series of cases with such treatment as thorium X and ultraviolet light could have been just as well ascribed to spontaneous improvement. There were 139 patients with port wine stains. Of these, 84 (60%) had the stains on the face.

TABLE 1.—*Types of Angiomas*

Hemangioma simplex	329
Hemangioma cavernosum	584
Nevus flammeus	139
Lymphangioma circumscriptum	5
Spider nevi	31
Senile angiomas	7
Hemangiosarcoma	3
Hemangioendothelioma	4
Hemangiopericytoma	1
Sclerosing angioma	1
Arteriovenous fistula	7
Cirsoid aneurysm	2
Total	1,113

Hemangioma simplex and the cavernous type were treated in the various departments by gamma rays of radium, roentgen rays, excision, in a few instances by excision and grafting, by ligation of the vessels feeding the hemangioma, and by the application of solid carbon dioxide. Also, sclerosing agents such as quinine urethan solution or sodium morrhuate were injected into the lesions in certain indicated cases. Tables 2 and 3 show the number of cases treated by the various methods according to the site of the lesion on the body.

TABLE 2.—*Type of Treatment According to Location of Hemangioma Simplex Lesion*

Location	Untreated	Radium	Surgery	Sclerosis	X-ray	Solid Carbon Dioxide	Total
Face	37	27	8	19	3	6	100
Scalp	13	11	8	5	0	1	38
Trunk	64	26	14	7	1	3	115
Extremities	39	20	8	4	1	4	76
Total	153	84	38	35	5	14	329

TABLE 3.—*Type of Treatment According to Location of Hemangioma Cavernosum Lesion*

Location	Untreated	Radium	Surgery	Sclerosis	X-ray	Solid Carbon Dioxide	Total
Face	12	73	45	28	6	..	164
Scalp	11	33	34	5	..	1	84
Trunk	30	56	61	23	2	2	174
Extremities	18	46	67	19	9	3	162
Total	71	208	207	75	17	6	584

Most of the lesions treated by surgical methods and those by injection of sclerosing agents were treated in the department of surgery. The use of radium and x-rays was handled by the departments of radiology and dermatology. Most of the cases were first seen in pediatrics and disposition was made from there to the various departments.

It is not within the scope of this study to report treatment results of the various procedures. The cosmetic appearance of the treated site is the most important consideration, and accordingly the method of treatment should be carefully chosen to serve that purpose. In previous papers one of us[8] has advocated the use of radium plaques with gamma radiation as the treatment method of choice. The technique used has proved to be a safe, reliable, and cosmetically superior way of treating hemangiomas without inducing radiation sequelae.

Table 4.—*Hemangiomas, Simplex and Cavernosum, Persisting for Five Years or More and Subsequently Treated*

	Surgery	Sclerosis	Electrodesiccation	Radium	X-ray	Total
Hemangioma simplex						
1 cm. or less	3	4	4	..	..	11
More than 1 cm.	8	8	..	3	..	19
Total	11	12	4	3	..	30
Hemangioma cavernosum						
Single	68	27	..	8	2	105
Multiple-extensive	3	..	..	..	..	3
Total	71	27	..	8	2	108

With modern radiotherapy, undesirable sequelae are not observed. The techniques have been standardized and used for over 20 years. They are safe, and the dose reaching the gonads is within reason, being influenced by the location of the angioma, the protection given, and the quantity and quality of radiation employed. The advantages of radium plaques applied externally over areas to be treated roentgenologically have been explained in previous articles.[8] The depth dose is less and the skin dose, as measured in biological terms, is less. With the radium plaques, the rate of delivery of the dose is also less than with roentgen therapy. Our customary radium technique delivers a total of 2½ erythema doses over the period of one year, whereas with common x-ray techniques 5 to 10 erythema doses are given within two or three months. Although the erythema dose is outmoded in cancer therapy, it is a useful biological criterion in nonmalignant skin disease treated by radiotherapy.

Table 5.—*Observation of Untreated Hemangioma Simplex in Patients Not Receiving Treatment During First Five Years of Life*

Location	Persistent	Involuted	Improved	Total
Face	13	10	3	26
Scalp	4	6	1	11
Trunk	10	32	7	49
Extremities	11	4	1	16
Total	38	52	12	102

Tables 2 and 3 show that 43% of the treated lesions of hemangioma simplex and 45% of the cavernous hemangiomas on the face received radium therapy. Sclerosing treatment was second in frequency for the simplex type and third in the cavernous hemangiomas.

The judicious use of injections of sclerosing agents often produces good cosmetic results, although ulceration and scarring may be caused by the sclerosing treatment even in the hands of an expert. Solid carbon dioxide treatment was used in only 20 cases of hemangioma simplex and hemangioma cavernosum, and all the lesions were small. The excessive scarring produced by cryotherapy cannot be avoided, and this procedure should be limited to lesions on the face of a diameter not exceeding 5 mm. or small lesions elsewhere. Cavernous hemangiomas will not respond to cryotherapy without inducing deep ulceration. The resultant scarring does not produce the fine cosmetic result that is the principal goal of therapy.

Surgical methods of treatment are effective in treating hemangiomas, and the period of treatment is thereby shortened considerably. However, cosmetic results must be kept in mind. On the face, especially, extensive lesions are not suited to surgical procedure. This is adequately demonstrated in tables 2 and 3, which show that hemangiomas of both the simplex and cavernosum type were treated predominantly with radium.

Table 6.—*Hemangioma Simplex Lesions Involuting Without Treatment According to Location, Size, and Type*

Location	1 cm. or less	1.1-2 cm.	2.1-3 cm.	Size Unknown	Total
Face	8	..	..	2	10
Scalp	4	..	1	1	6
Trunk	15	3	1	13	32
Extremities	3	1	..	..	4
Total	30	4	2	16	52

Table 7.—*Observation of Untreated Hemangioma Cavernosum in Patients Not Receiving Treatment During First Five Years of Life*

Location	Persistent	Involuted	Improved	Total
Face	31	2	1	34
Scalp	10	2	2	14
Trunk	15	6	4	25
Extremities	57	5	..	62
Total	113	15	7	135

Untreated Hemangioma Simplex and Cavernosum

Of the 329 patients with hemangioma simplex, 153 (47%) received no treatment (table 2). In addition, there were 30 patients who had persistent strawberry marks for five years or more and who subsequently received definitive therapy (table 4).

Adequate observation of the untreated lesions was possible in 102 cases of hemangioma simplex (table 5). Spontaneous involution occurred in 52 (51%) of the cases. Attention must be directed simultaneously to table 6, which shows that of the 36 lesions with involution and known size, 30 (83%) were 1 cm. or less in diameter.

Improved lesions were designated as those which had paling and flattening. Some of these lesions had inadequate time lapse for expected involution in five years. There were 12 (12%) noted with improvement (table 5). Lesions persistent for a period of five years or more numbered 38 (37%) of the 102 (table 5). Of the 38, definitive therapy subsequently was given to 30 (80%).

Of the 584 patients with hemangioma cavernosum, 71 (12%) received no treatment (table 3). In addition, there were 113 cases of persistent lesions for five years or more (table 7). Of these 113 cases, there were 108 cases subsequently treated (table 4).

Adequate observation was possible in 135 cases (table 7). Spontaneous involution occurred in 15, or 11% (table 8). Improvement occurred in 7 (5%) (table 7). Lesions persistent for a period of five years occurred in 113 (84%).

TABLE 8.—*Hemangioma Cavernosum Involuting Without Treatment According to Location, Size, and Type*

Location	1 cm. or less	1.1-2 cm.	2.1-3 cm.	Size Unknown	Total
Face	..	1	..	1	2
Scalp	1	1	..	..	2
Trunk	2	..	2	2	6
Extremities	..	2	3	..	5
Total	3	4	5	3	15

Summary and Conclusions

The records of 1,113 patients with the diagnosis of angioma were studied. Of these, 329 patients had hemangioma simplex and 584 had hemangioma cavernosum. Of the 153 patients with hemangioma simplex who received no treatment, 102 could be observed adequately (table 5). In 64 cases (63%) the lesions involuted or improved within five years. In 38 (37%) the hemangiomas persisted after five years. In those cases of hemangioma simplex with spontaneous involution, 83% were lesions with a diameter of 1 cm. or less (table 6). It may be concluded that any hemangioma simplex on the face measuring 1 cm. or more should be treated with no delay, since those of larger size have poor possibilities of involution without therapy. Occasionally one encounters a case where a large hemangioma disappears spontaneously without scar, but one also sees occasional cases in which large hemangiomas persist, grow, ulcerate, and become serious problems. The likelihood of ulceration of hemangiomas on the lips, nostrils, eyelids, and the ears suggests that these lesions should be treated even though they are less than 1 cm. in diameter.

Of the 135 patients with hemangioma cavernosum who received no treatment during the first five years of life and who could be followed adequately, 22 (16%) showed involution or improvement of the lesions within a period of five years (table 7). In 113 (84%) these lesions persisted more than five years. The high percentage of persistence in untreated cavernous hemangiomas indicates the desirability of treatment for all cavernous hemangiomas.

When treatment is given to hemangiomas, the method of therapy must be carefully chosen to secure the best cosmetic results. We feel that radium therapy, properly administered, assures excellent results without risk of radiation sequelae. However, in some cases surgical excision, ligation, solid carbon dioxide, or roentgen ray treatment are indicated.

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Laboratory Diagnosis of Typhoid Fever.—Diagnosis of the classical case presents little difficulty but in many instances the clinical picture is atypical, and laboratory tests are essential in making the diagnosis. Such tests fall into two main groups, viz., isolation of the causative organism and serological procedures. . . . A study of cultural and serological methods of diagnosis in a series of 227 cases of typhoid fever demonstrated that the former methods were to be preferred. In particular culture of blood clot is a more satisfactory procedure than culture of whole blood. Our total recovery rate from blood culture methods was 89%, and this in spite of many patients having received antibiotic therapy before blood samples were taken. Accepting a serum dilution of 1/250, for 0 type agglutination, as being the minimal suggestive titer we found 5% false positive reactions. Twenty eight per cent negative results were obtained.—K. C. Watson and W. Laurie, The Laboratory Diagnosis of Typhoid Fever in Areas of Endemicity, *The American Journal of Tropical Medicine and Hygiene*, November, 1956.

THE ALLERGIC DERMATOSES

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Allergy is an acquired specific alteration in the capacity of the system to react, brought about by an antibody mechanism. Conventionally Antibodies are modified serum globulins that make it possible for certain serologic and/or cellular reactions to develop; the term "antibody" is extended to include a cell with specifically altered properties toward the antigen. In primary allergic dermatoses the cutaneous lesions develop as a direct consequence of the antigen-antibody union; erythema nodosum and other "id" reactions are of this type. In nonprimary allergic dermatoses there is some less direct relationship to the allergic process; most cases of atopic dermatitis are of this type. Nonprimary allergic sensitivity, like the primary types, can be either immediate or delayed. History taking and skin testing are extremely valuable and often essential for the etiological diagnosis; but they never establish the morphologic diagnosis, which is the physician's first responsibility. Skin tests are sometimes worse than useless because so many atopic persons give numerous positive reactions that are etiologically irrelevant. There are no cutaneous tests that help to establish the diagnosis of infectious eczematoid dermatitis and nummular eczema, but the morphologic chara teristics of these two dermatoses are fai precise, so that these labels can be applied the basis of inspection alone. The distinctic between primary and nonprimary allergic de matoses is of practical importance because determines how the condition will respond any interference with the antibody-antige union.

The purpose of this paper will be to consider what is meant by the label "an allergic dermatitis," to enumerate the conditions included under this caption, and to justify their inclusion. A brief discussion will be given of the individual conditions, with respect to their immunological characteristics and their diagnostic problems. The label, "allergic dermatitis," has been used to designate dermatoses that are believed to be brought about by, or to be somehow related to, an allergic reaction. It would appear desirable, however, to scrutinize this designation more carefully and, in light of accumulated knowledge, to determine the qualifications for membership in the group, to decide which cutaneous conditions fulfill these requirements, and finally to assess their relationship to one another.

While this article will not concern itself with a discussion of any fundamental concepts concerning the nature of allergy or of the immunological mechanisms involved in allergic reactions, the term "allergy" will be defined so that there can be no misunderstanding concerning its use. The criteria that must be met in order to label a reaction as allergic (in this discussion a skin lesion) will be considered. Allergy is an acquired specific alteration in the capacity to react, brought about by an antibody mechanism. This definition excludes all forms of altered biological activities not brought about by an antibody mechanism. For example, consider the tolerance that a person develops toward alcohol. It is well attested that initially a person can tolerate only a certain amount of an alcoholic beverage; but, should he persist in this pleasant research, after some time it is found that a considerably larger quantity of the alcoholic beverage can be consumed without apparent adverse effect. This represents an acquired alteration in reactivity. It is also specific, in that the tolerance is directed only toward alcohol, not toward, say, morphine or barbiturates. Hence, unless a qualifying phrase, such as "brought about by an antibody mechanism," is appended to the definition of allergy, of necessity types of altered behavior are included in the definition which do not, either on clinical or immunological grounds, belong there.

The inclusion of the phrase, "brought about by an antibody mechanism," while removing forms of altered reactivity it is not desired to include within the scope of allergic conditions, creates certain conceptual difficulties. The chief one arises with the definition of an antibody. Conventionally, antibodies are modified serum globulins, primarily gamma globulins, that have certain specific properties; as a consequence of their existence various serologic and/or cellular reactions can develop. It is, however, well known that in many allergic conditions, indeed, in the majority with this paper will deal, circulating antibodies cann demonstrated that have anything whatsoever t with the development of the lesions in question. poses a dilemma as to the justification for the i sion of such conditions under the label of aller

Some years ago, Brunner and I[1] suggested a sible solution to this dilemma; we hypothesized the basis for all sensitizations was the adaptation enzyme system. If the enzyme system which bec adapted is one concerned with the synthesis of s globulin, then, as a consequence, there will be evi of the adaptation in the form of modified serum g

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or. in other words, there will be circulating anti- es. If, however, the enzyme system which becomes ted is one that has nothing to do with the syn- s of serum globulin, then there will be no modi- ion in the serum globulin, or, there will not be any lating antibody.

should therefore be clearly understood that in the ition of allergy the term "antibody" does not ssarily mean a conventional circulating antibody, ough such can exist. The basic essential alteration e adaptation of the enzyme system. It is not likely any enzymatic alteration can give rise to signs symptoms that would be labeled as allergic, but paper will not consider the precise nature or the s of the hypothesized enzymatic alteration. Thus, llergic reaction—in this case a clinical lesion—is that develops as a direct consequence of the anti- antibody union; and it is understood that the term ibody" includes a cell with specifically altered erties toward the antigen.

Criteria for Diagnosis of Allergic Reaction

he problem is now to decide what criteria will be anded before a clinical reaction will be accepted aving developed because of the allergic reaction. iously, if, upon transfer of a circulating antibody ell suspension or derivative therefrom to a normal pient, the recipient becomes altered so that contact h the allergen now produces the lesions in question, reas prior to the transfer it did not, there can be e question concerning the allergic mechanism. Un- unately, such a demonstration is not always pos- e, or, if possible, is not feasible. What justification here then for the label in cases in which the com- e proof is lacking? It may be said in advance that, rule, there is little if any. In many clinical condi- s in which an allergic pathogenesis is suspected e is no concrete evidence to support such a hy- hesis. What reasons are usually advanced for label- such cases as allergic? These are that (1) response ibited deviates from the usual one to the substance; the person deviates from the bulk of persons ex- ed to the agent in question; (3) the type of re- nse is akin to those seen in proved allergic re- ons; or (4) the pathological alterations are those n in proved allergic responses. It can be categori- y asserted that, while the above criteria may suggest make one suspicious that the reaction is on an rgic basis, none of them, singly or collectively, ve it. Parenthetically, it might be pointed out that my opinion a pathological diagnosis of allergy is possible. The presence of a blood or tissue eosino- lia does not of itself label the reaction as an allergic . The most that can be expected of the pathologist hat he will be able to state "compatible with."

he term "dermatitis" will be employed in its usual aning, denoting an inflammation of the skin or any er thereof. No distinction will be made between in- nmation involving the epidermis alone or the cutis ne, or both. The term "dermatosis," while not synonymous with dermatitis, in this article will be used to mean essentially the same thing. The prime concern of this paper will be to examine how the dermatitis is related to the allergic process.

Before a consideration of this relationship from the clinicoimmunological point of view, it is in order to digress momentarily to consider the nature of the concept of a causal relation. To discuss this adequately would amount to writing a treatise in philosophy; but, inasmuch as most physicians, in my opinion, do not have a proper understanding of the nature of a causal relation, it is worthwhile to consider it very briefly. The point I should like to emphasize most is that, in considering factors in the causation of a disease, there is either confusion between a causal and a correlative factor or the fallacious *post hoc, ergo propter hoc* argument is advanced. Treloar[2] has discussed this well. He says: "The notion that everything that happens is caused by something else seems so completely rational that any challenge of it must savor of useless quibbling. Scientists and laymen alike are apt to accept without question the idea that for every 'effect' there is a 'cause.' All too frequently thoughtful persons seem unaware that there are pitfalls in this pattern of thinking."

Apart from the natural desire to have a proper understanding, such matters are not merely pedantic gobbledygook, for a therapeutic attack against "something" which is in the causal chain will have quite different results than if that same "something" stands only in a correlative relationship.

That there can be different kinds of relationships between a skin lesion and an allergic process, I do not believe requires documentation. It is the nature of the relationships about which there may be argument. I shall speak of primary and nonprimary relationships. While such a distinction is not ordinarily made, I believe it to be worthwhile. This differentiation would serve to avoid some of the confusion that exists about the pathogenesis of certain of the conditions to be discussed. A primary allergic dermatitis is defined as one in which the cutaneous lesions develop as a direct consequence of the antigen-antibody union. A nonprimary one is defined as a dermatitis in which the skin lesions do not arise as a direct consequence of the antigen-antibody union but in which there is some relationship to the allergic process.

The nonprimary allergic dermatoses can be further divided into secondary, tertiary, and composite ones. These are defined as follows: 1. A secondary allergic dermatitis is one in which the skin lesions do not arise as a direct consequence of the antigen-antibody union but in which the cutaneous lesions are exacerbated by the antigen-antibody union. 2. A tertiary allergic dermatitis is defined as one in which the skin lesions are not directly produced by the allergic process, nor are they exacerbated by it, but a reasonable correlation is found to exist between the presence of the skin lesions, on the one hand, and the existence of some allergic manifestation or state, on the other. 3. A com-that oftentimes it is not possible to prove beyond doubt that a given drug was causally responsible for a particular reaction.

Skin tests are of almost no value in arriving at an etiological diagnosis. As was already mentioned, many drug reactions are of a nonallergic nature; consequently, there is no theoretical basis for allergic skin tests. In the allergic varieties of drug reactions the usual types of skin tests can be employed, but they are of little practical value. In urticarial drug reactions the same remarks apply as were made when urticaria was considered, namely, that, in use, the tests are almost worthless. In eczematous drug reactions from the external application of the drug, patch tests are ordinarily positive; however, in general, they are not required in that the etiological diagnosis is usually self-evident on the basis of distribution and history.

Atopic Dermatitis

Of the conditions listed in table 1, there probably would be most argument concerning the pathogenesis of atopic dermatitis. The term "atopic dermatitis" was coined because it was then felt that the skin lesions were the cutaneous analogue of asthma and hay fever; in other words, the dermatitis developed because of the reaction between the Prausnitz-Küstner antibody and its antigen. While this is an attractive hypothesis, there is no evidence to support it and much to negate it. First of all, the cutaneous lesions of atopic dermatitis are not urticarial, whereas the only known reaction between the atopic antibody and its antigen is an urticarial wheal. Second, none of the myriad of immediate urticarial wheal reactions that have been produced in the skin of people with atopic dermatitis by the introduction of the various presumed antigens have ever converted or evolved into the skin lesions of atopic dermatitis. This concept gives rise to the paradox that introducing the alleged antigen into the primary shock tissue with the production of the immunological reaction does not result in the development of the lesions of the disease in question.

It should also be realized that being an atopic individual is neither a necessary nor a sufficient condition for the development of the disease labeled atopic dermatitis. It is not a necessary condition in that 20 to 30% of persons with the skin lesions give no personal or family history of atopy, nor do they display any immediate type of sensitivity. It is not a sufficient condition, for if it were every person with atopic asthma or hay fever would have the skin lesions of this disease, and of course the fact is that only a small percentage of such persons have a concomitant dermatitis. It might also be pointed out that all of the individuals with an atopic asthma or hay fever are intermittently or continuously inhaling or ingesting the allergens to which they are sensitive and yet, except in the small percentage already mentioned, fail to develop any skin lesions, despite the fact the atopic antibody exists in the skin of such persons, as can be shown by direct skin testing.

Comment

My views as to the pathogenesis of the ski
of atopic dermatitis are essentially those of t
French dermatologists, namely, Besnier, Bro
Jacquet.[10] Similar ideas have recently been a
by Ingram.[11] This concept asserts that there
features in the production of the cutaneous d
The first, which is by far the more important,
an intrinsic, inherited (genetically determine
normality of the skin exists. The second is ir
or eczematization that can be engrafted up
former. The inherited abnormality of the skin
poses it to lichenification and makes such pers
pecially vulnerable to pruriginous or irritating s
In them any pruriginous stimulus can lead to t
velopment of the cutaneous lesions. Continued
tus or external irritation of one or another ki
produce an eczema on top of the lichenificati
this is a secondary phenomenon. Essential
same idea was stated by Jacquet many years ag
he said, "It is not the eruption that is itchy; i
itchiness that is eruptive." An antigen-antibod
by virtue of the release of histamine, can caus
tus, which, by inducing scratching, can yield a
matization of the abnormal skin; but in my
the damage of the skin of an atopic individual l
of antigen-antibody union happens so infre
at least in those persons beyond infancy, that i
ignored.

Skin tests for the discovery of substances res
for the production of the cutaneous lesions ar
opinion, worthless. Indeed, in many cases t
worse than worthless, in that they becloud th
Many persons with this condition, because t
atopic individuals, will give numerous posi
mediate wheal reactions to a variety of allerg
none of these are of etiological relevancy. I
human, especially when the patient is doing p
pay attention to these; consequently the p
either put on a diet, which is at best usele
worst nutritionally impoverishing, or is start
regimen of "desensitization" shots, which a
nothing at best or cause unpleasant and possil
gerous reactions at worst. Indeed, these may
bate the skin lesions, for, while the sensitivity
logically unrelated, it exists, and the administr
the antigen will cause an antigen-antibody unio
the release of all the substances that accompa
an interaction, especially histamine. This can
extremely pruriginous stimulus, with att
scratching and exacerbation.

Infectious Eczematoid Dermatitis

Infectious eczematoid dermatitis was ori
thought to be an eczematous condition of th
developing because of irritation from discharg
ning over the skin surface.[12] Later it was hypoth
that there might be a sensitization to the dis
or materials contained therein. The condition l

mmular or herpetoid eczema had been earlier bed. This was subsequently thought to be a icial infection of the skin. In recent years the ıcy has been to regard infectious eczematous ıtitis and nummular eczema as essentially the both being superficial cutaneous infections. It questionable whether an allergic element enters he genesis of these lesions, although it has been hesized that the full-blown picture requires (1) evelopment of the infection, and (2) a subse- sensitization, either to the micro-organisms or interaction product of the micro-organism and ssues of the host.

› term "autosensitization dermatitis" was coined hitfield[13] to denote eruptions which he thought ɔped because the host became sensitized to some ct released from an area of injury or infection. :oncept clearly has a kinship to the allergic hy- sis for the genesis of infectious eczematoid der- s. Theoretically, there is no a priori reason why lividual could not become sensitized to proteins mplex carbohydrates of his own body which either become altered or removed from their usıatomic locus so that they would be regarded by ost as alien material; but proof is lacking that ctually happens in the clinical entities for which iew has been advanced.

› morphologic characteristics of infectious ecze- d dermatitis and nummular eczema are fairly ıe, so that these labels can be applied on the of inspection alone. The morphologic conditions ıich the pathogenic label "autosensitization der- is" would be applied are poorly defined, so that might be a considerable disagreement as to what ıs would warrant such a designation. There are ıtaneous tests of any kind which would help to lish these diagnoses.

Summary

"allergic" dermatoses, there can be various relaıips between the allergic process and the skin ıs. The true allergic dermatoses are those in ı the skin lesions develop as a direct consequence of the antigen-antibody interaction. When the relationship between the skin lesion and the antigen-antibody union is not of this nature, the allergic dermatosis is secondary, tertiary, or composite. This distinction is not merely theoretical, as the effect of an interference with the antigen-antibody union upon the skin lesions will differ according to the type of the relationship.

1853 W. Polk St. (12).

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Virus Theory of Leukemia.—Clinicians interested in leukemia have been impressed by similarities between leukemias and infections, as evidenced by parallel onset, course, findings, and episodic exacerbations and remissions. The relentless course; the never lasting therapeutic response; the irreversibility of the process; and the inevitably fatal outcome, by no means exclude infection. The remissions in the course of leukemia which have been observed to follow specific infection, whether bacterial or viral, have also been thought to suggest an infectious etiology. . . . The relative importance of the virus as an etiologic agent is the chief problem to be resolved. There must then follow the identification, isolation, and purification of the virus, after which it will have to be determined whether a specific virus causes the different types of leukemias or whether the difference is one of host response. Is one dealing with one or several viruses when either leukemia or different types of tumors appear in different hosts after similar inoculation? Although we believe that there are many different viruses capable of producing a response that is recognized as leukemia, the response of the host is at least equal in importance to that related to the attending agent.—S. O. Schwartz, M.D., Etiology of Leukemia: A Case for the Virus Theory, *Blood,* November, 1956.

INCIDENCE OF DISSEMINATED LUPUS ERYTHEMATOSUS

FOLLOW-UP STUDIES INDICATING INCREASED FREQUENCY

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and
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Three two-year periods (1938-1939, 1948-1949, and 1954-1955) have been compared as to the incidence of disseminated lupus erythematosus in a Swedish city. The case records of all patients with neuritis, fever of unknown origin, sepsis, uncertain diagnosis, and diseases of the heart, blood vessels, joints, and skin were reviewed. The suspected cases so found were all followed up and the diagnosis was verified in 24 cases by data from reexamination, records of later hospitalizations, or autopsy. The number of cases (18) during the third period was six times as great as that during the first (3) and the second (3) periods. This is not accounted for by the increases in the population of the city or by any change in diagnostic criteria. The authors give reasons for concluding that there has been a genuine increase in the incidence of disseminated lupus erythematosus.

The frequently extremely grave disease picture we diagnose as disseminated lupus erythematosus is by no means a rarity in our hospitals today, although not many years ago this disease was regarded almost as a curiosity. Is this due to improved diagnostic technique, or has there been an actual increase in the incidence of the disease? Disseminated lupus erythematosus is not a recent discovery. As early as 1872 Kaposi demonstrated that certain cases of discoid lupus erythematosus also presented general pathological symptoms that could lead to death. In 1895, Osler described in detail the polymorphism of the disease and discussed cases even without lupus changes. An extensive monograph on the disease was published in 1954 by Harvey and co-workers.[1]

In typical cases disseminated lupus erythematosus is a severe systemic disease with fever, usually without leukocytosis, and with joint symptoms, often with little objective manifestation but with pronounced subjective symptoms. In addition, there are various skin manifestations, polyserositis, carditis, and renal involvement. In some cases cerebral, intestinal, and hematological symptoms also appear. The etiology of the disease has not been clarified. An allergic genesis has been suggested, however. The onset of the disease is often manifested by sudden appearance of allergic skin lesions. Tumulty[2] reports that medicamentous and other hypersensitive reactions are so common that this disease should be kept in mind in patients showing a tendency to hypersensitivity. Moreover, it is probable that a number of diseases closely related to disseminated lupus erythematosus may have allergic genesis. The relation between rheumatic fever and streptococcic allergy is well known. It is also considered established that the incidence of periarteritis nodosa has increased since the introduction of sulfonamides, and periarteritis nodosa can be induced experimentally by prolonged administration of sulfonamides and iodine, for instance.[3]

During the last few years "symptomatic" disseminated lupus erythematosus resulting from medication has been described. The best known is disseminated lupus erythematosus occurring in hydralazine hydrochloride therapy. The disease resulting cannot be clinically differentiated from disseminated lupus erythematosus. The pathogenic mechanism of the hydralazine syndrome, however, has not been established. It usually occurs only after administration of relatively large doses over an extended period. If the preparation is withdrawn, t symptoms disappear, but they usually reapp quickly after renewed hydralazine administratio

Hargrave (1948) gave us an important diagnost aid by demonstration of the L. E. cell. When t correct technique is used, a positive L. E. phenom non may be considered pathognomonic of dissem nated lupus erythematosus and of the hydralazi syndrome.[5] L. E. cells have been found in som patients with rheumatoid arthritis without signs o disseminated lupus erythematosus at the time o investigation.[6] Of course, it is possible that dis seminated lupus erythematosus will develop sooner or later in those patients. On the other hand, a posi tive L. E. phenomenon is not obtained in all cases of definite disseminated lupus erythematosus.

Has the incidence of the disease really risen, o does the apparent increase depend upon greater knowledge of the disease or upon improved diag nostic methods? Dubois[5a] was of the opinion h could demonstrate that the increase was due t improved diagnosis, inasmuch as he found the inci dence quadrupled after introduction of the L. E cell test. No actual follow-up study of comparative material was carried out, however. Therefore, th investigation cannot be considered conclusive.

From Medical Clinic II, Sahlgren's Hospital.

The Present Study

In an effort to clarify this question we have instituted a follow-up study of patients hospitalized in Medical Clinic II at Sahlgren's Hospital during 1938 and 1939, 1948 and 1949, and 1954 and 1955. Gothenburg is a Swedish city (population 380,000) having only one hospital, with two medical clinics, to which all patients residing in the city are referred when hospitalization in a medical department is necessary. The cases treated in these two clinics are largely similar.

The years 1938 and 1939 were selected because they were prior to the sulfonamides and antibiotics era; 1948 and 1949 were chosen because they were the first years from which roentgenograms are available for follow-up study. We reviewed all records in cases where the pathological picture might conceivably have represented a partial phenomenon in disseminated lupus erythematosus. The case records reviewed were those of patients with cardiac and vascular disease, pulmonary disease, neuritis, joint disease, skin diseases, fever of unknown origin, sepsis, and uncertain diagnosis.

In each case in which the diagnosis did not primarily preclude disseminated lupus erythematosus, as for example arthritis deformans or lumbago-ischialgia, we sent a questionnaire to the patient requesting information on subsequent hospitalization, if any, and on present physical condition. We succeeded in the end in tracing all patients.

TABLE 1.—*Data on Patients with Disseminated Lupus Erythematosus Seen in Göteborg, Sweden, in 1938-1939, 1948-1949, and 1954-1955*

Case No.	Age, Yr.	Sex	Yr. Seen	Joint Symptoms	Polyserositis	Heart Symptoms	Skin Symptoms	Enlarged Lymph Nodes, Spleen	Anemia	WBC*	CNS Symptoms	Nephropathy	Pulmonary Changes	Maximum SR. Mm./Hr.	Fever	L.E. Cells	Died, Yr.	Diagnosis at Autopsy
1	46	M	1938	+	—	+	—	—	—	+	—	+	...	64	+	...	1938	Sepsis; acute myocarditis; rheumatic arthritis
2	19	M	1939	+	+	+	—	—	+	—	—	+	+	139	+	...	1939	Pancarditis polyserositis
3	47	M	1939	+	—	—	—	—	+	...	—	+	...	122	+	...	1948	Nephrosis; pleuritis; rheumatic heart disease; anemia†
4	44	F	1948	+	+	+	—	—	+	...	+	+	+	111	+	...	1949	Myodegeneration of heart; pulmonary edema; cerebral thrombosis; renal involvement
5	58	F	1949	+	+	—	—	—	+	(+)	+	+	—	110	+	...	1950	Rheumatic arthritis; endocarditis
6	37	M	1949	+	+	+	+	+	+	+	—	+	—	82	+	...	1949	Disseminated lupus erythematosus
7	25	M	1954	+	+	+	—	—	—	+	—	+	—	94	+	+	1955	Disseminated lupus erythematosus
8	61	M	1954	+	+	+	—	—	+	+	—	+	+	105	+	+	...	......
9	41	M	1954	+	+	+	+	—	+	+	—	—	—	68	+	—	...	......
10	38	M	1954	+	—	—	+	—	—	+	+	+	+	67	+	+	1955	Disseminated lupus erythematosus
11	44	F	1954	+	+	—	+	—	—	—	—	+	+	101	—	—	...	......
12	32	M	1954	+	+	+	—	—	—	+	—	+	—	120	+	+	...	......
13	64	M	1954	+	+	+	+	—	—	+	—	+	...	50	+	...	1954	Disseminated lupus erythematosus
14	32	F	1954	+	+	+	+	+	—	+	—	+	—	22	+	+	1954	Disseminated lupus erythematosus
15	33	M	1954	+	—	+	+	—	+	—	—	+	(+)	76	+	—	...	......
16	57	M	1955	+	+	—	+	—	—	+	—	—	+	128	+	+	...	......
17	66	M	1955	+	+	—	+	—	—	+	+	+	+	107	+	...	1956	Disseminated lupus erythematosus
18	41	M	1955	+	—	+	—	—	+	+	—	+	—	130	+	+	...	......
19	55	F	1955	+	+	—	—	—	—	+	—	—	+	85	+	+	...	......
20	72	M	1955	+	—	—	+	—	—	+	+	—	+	69	+	+	...	......
21	53	M	1955	+	—	+	—	—	—	+	+	+	+	71	+	—	1955	Disseminated lupus erythematosus
22	54	M	1955	+	+	—	+	—	—	+	—	+	—	85	+	+	...	......
23	33	F	1955	+	+	—	—	—	—	...	—	+	—	78	+	(+)	...	......
24	67	M	1955	+	+	+	—	—	+	—	—	+	—	113	+	(+)	...	......

* +=Normal or low WBC in patients with high fever. † According to death certificate.

In cases where there had been treatment in other hospitals we studied their records. Moreover, in all clinically suspicious cases the patients were re-called for follow-up examinations. In the instances where the patient had died we reviewed the autopsy reports and death certificates. In these latter cases, where our conclusions are based on the death certificates, there is, of course, a source of error. However, there were only nine deaths not followed by autopsy in this group of patients hospitalized during the periods 1938-1939 and 1948-1949. The clinical suspicion in all these cases was relatively slight, and if these patients had been hospitalized with the same symptoms in 1954 and 1955 it would have been impossible to diagnose disseminated lupus erythematosus from the symptom picture. The death certificates were filed by physicians in practice in the city. The causes of death reported on the certificates give no reason to suspect that the cause of death in any case was disseminated lupus erythematosus or that the patient exhibited symptoms of this disease. It should be pointed out also that these patients would in all probability have again been hospitalized if the pathological picture had been as dramatic as it is, as a rule, in fatal cases of disseminated lupus erythematosus.

Results

Table 1 shows the number of cases of probable disseminated lupus erythematosus during the above-mentioned years. Thus, during the first two-year period three cases were treated. During the second two-year period there were also three cases. During the 1954-1955 period there were altogether 18 cases. If these figures are considered in relation to the population in the area served and the number of patients admitted during the respective periods, the probability that an increase in incidence actually occurred is statistically significant at the 1% level (table 2).

Comment

It is important to emphasize that in the present investigation the diagnoses are based on the clinical picture and in the earlier material on the post-hospitalization course as well. In no case was the diagnosis based on an atypical clinical picture with a positive L. E.-cell phenomenon. Accordingly, in our opinion, the diagnostic criteria have been the same throughout.

The diagnosis of disseminated lupus erythematosus in the material from 1938-1939 and 1948-1949 has been made even in doubtful cases on the basis of a study of the continued course of the disease. (As may be seen from table 1, the diagnosis was established in only one of the patients at the time of hospitalization.) It is highly probable that a similar review of the material from 1954-1955 after 10 years would show an even higher incidence of disseminated lupus erythematosus, inasmuch as the initial symptoms in this disease can be relatively insignificant. Therefore, it would seem there has been a real increase in the incidence of disseminated lupus erythematosus.

TABLE 2.—*Total Population, Clinic Population, and Cases of Disseminated Lupus Erythematosus in Gothenburg During Years Studied*

Yr.	Total Population	Patients at Medical Clinic II, No.	Patients with Disseminated Lupus Erythematosus, No.
1938	275,753	1,643	1
1939	280,601	1,622	2
1948	343,978	2,373	1
1949	349,145	2,428	2
1954	373,433	2,300	9
1955	380,442	2,171	9

It is impossible, of course, to express a definite opinion as to the cause of the increase as long as the etiology of the disease is uncertain, but if we accept a toxic or allergic or immunological pathogenesis and consider that people today are increasingly in contact with such materials as sulfonamides, antibiotics, preservatives, and dyes, it would seem possible that therein may lie the cause of the increased incidence.

The number of patients with disseminated lupus erythematosus in this investigation is not great. On the other hand, we have a more or less closed population in Gothenburg, with all of the inhabitants coming to the one hospital. Therefore, we succeeded in tracing all patients for follow-up study, which certainly would not have been possible if the town and the hospital had been larger. The fact that our results are based upon a follow-up study where we succeeded in tracing all patients is the best argument for our conclusion.

Summary

Through a follow-up study of patients hospitalized during 1938 and 1939, 1948 and 1949, and 1954 and 1955, the incidence of disseminated lupus erythematosus during these years is estimated. All patients in whom the pathological picture might conceivably have been a partial phenomenon in disseminated lupus erythematosus were followed. It was possible to trace all patients. Through evaluation of the continued course of the disease and the present condition of the patient or a review of autopsy results or death certificate in each case, the incidence of disseminated lupus erythematosus is determined.

There were three patients in 1938 and 1939 and three in 1948 and 1949 in whom disseminated lupus erythematosus might be suspected. In 1954 and 1955 the hospital treated 18 patients (9 in 1954 and 9 in 1955) in whom the definite diagnosis was disseminated lupus erythematosus. The diagnosis was established on the basis of a typical clinical picture and not on the basis of recently developed clinical aids such as the L. E.-cell phenomenon. The diagnosis in cases from 1938-1939 and 1948-1949 was also based on the continued clinical course. It seems probable that a similar follow-up of patients hospitalized in 1954 and 1955 after 10 or 20 years would further raise the number of disseminated lupus erythematosus cases from these years. If these results are considered against the background of the magnitude of the population in Gothenburg and the number of patients hospitalized during the years in question, the probability of a real increase in incidence is statistically significant at the 1% level.

Aschebergsgatan 48 (Dr. Svanborg).

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CASE REGISTRY FOR RHEUMATIC FEVER AND GLOMERULONEPHRITIS

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The frequency of episodes of acute rheumatic fever and acute glomerulonephritis in the region about Miami, Fla., was studied by establishing a registry with the cooperation of physicians and hospitals. Monthly reports were obtained over a period of 13 months, during which 17 acute attacks of rheumatic disease and 18 of glomerulonephritis were reported. These low frequencies were striking in view of the fact that group A beta-hemolytic streptococci have been recovered from the throats of more than 40% of a group of school children between the ages of 6 and 9 years. Autopsies reveal a lower frequency of heart lesions due to rheumatic disease in persons born in Florida than in those born elsewhere. Establishing similar registries in other parts of the country would yield valuable data as to geographic factors in disease.

urate incidence rates of rheumatic fever are lt, if not impossible, to obtain. The diagnosis disease cannot be substantiated by any specific and the final evaluation often depends on the ssion of the attending physician. More imporhan this difficulty of diagnosis, however, is the e of the state to require the reporting of rheufever, at least in many states. Even in those in which each episode of the disease must gistered, there appears to be considerable laxity orting.

ce we know so little of the etiology, pathogenicity, liagnosis of rheumatic fever, any information on ency, as, for example, in relation to different tic areas, may be invaluable in directing and ing in the investigation of vital problems of and mechanism of disease occurrence.

these ends, I have instituted a voluntaryproe for accumulating a reasonably adequate incirate of acute rheumatic episodes, for the er Miami, Fla., area. Because of the close lelism between acute hemorrhagic nephritis and natic fever, information was collected concerning diseases.

Method

e list of members of the Dade County Medical iation was reviewed for the type of practice in h each physician was engaged. The name of each r whose specialty was listed as general practice, nal medicine, cardiology, pediatrics, orthopedics, ology was typed on a 3-by-5 index card, with the ician's phone number entered on the card. Orthots were included in the study because of the ional patient with rheumatic joint pains who t seek medical care initially from a specialist in disease; similarly, glomerulonephritis might first etected by a urologist.

rting Sept. 1, 1955, each of the physicians in-l was contacted by telephone, briefed on the ose and method of the registry, and asked for operation. Only one physician refused to participate in the investigation.

e roster of new membership applications to the County Medical Association was reviewed hly, and additional physicians were indexed acing to their specialties. By Oct. 1, 1956, 13 months after the start of the program, a total of over 450 physicians were taking part in the case register. In addition, each of the 13 hospitals in Dade County participated.

From Oct. 1, 1955, through Sept. 30, 1956, each hospital and physician was contacted at monthly intervals, and the appropriate index card was stamped with the date of phoning. If no case of acute rheumatic fever or glomerulonephritis had been treated during the preceding month, the index card was returned to the file for use the following month. If a patient had been treated for, or suspected of having, either of these two diseases, the name of the patient was recorded in a special register, together with the address, age, sex, race, and treating physician. Within a few days, the treating physician was contacted again by the physician in charge of the case register for detailed information as to the mode of onset, history, symptoms, treatment, and progress of the patient's illness. The attending physician's index card then was returned to the files for use the following month.

Results

Rheumatic fever was reported 47 times between Sept. 1, 1955, and Oct. 1, 1956. Of this number, however, final diagnoses were corrected by the treating physician to conditions other than rheumatic fever in

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d before the fifth Inter-American Congress of Cardiology, na, Nov. 12, 1956.

eight cases. Another 22 reported instances were for treatment of congestive cardiac failure due to chronic progressive rheumatic cardiac decompensation or other complications, but not to acute rheumatic fever episodes. Definite acute episodes occurred 11 times; possible acute episodes numbered 6. Thus a total of 17 definite and possible acute attacks of rheumatic fever were recorded in 13 months in Greater Miami.

During the same period, acute hemorrhagic glomerulonephritis was reported in 30 patients. In 12 instances, the diagnosis was corrected or the disease was in a chronic progressive stage. Eighteen episodes of acute nephritis had occurred in 13 months in Greater Miami.

The age distribution of the 17 patients suffering from rheumatic fever and of the 18 with nephritis is shown in the table. In the 6-to-9-year age group, there were three rheumatic and six nephritic episodes.

Comment

The intensive use of the case register has provided, we believe, reasonably accurate data relative to the incidence of acute rheumatic fever and acute hemorrhagic glomerulonephritis in Greater Miami. The recording of only 17 acute rheumatic and 18 acute nephritic episodes indicates that these diseases were comparatively rare or that the attacks were so mild they went unrecognized.

Number of Patients with Definite or Suspected Acute Episodes of Rheumatic Fever or Glomerulonephritis Tabulated According to Age

Age	Rheumatic Fever	Glomerulonephritis
Under 6	1	6
6—9	3	6
10—15	3	5
16—20	4	...
Over 21	6	1
Total	17	18

The infrequency of these illnesses would lead to the conclusion that few group A beta-hemolytic streptococci are to be found in the southeast Florida area since a relationship between these organisms and the two diseases is believed to exist. However, in a concurrent study, between October, 1955, and May, 1956, by culturing throat swabs taken from 100 6-to-9-year-old children each month for eight months, we recovered group A streptococci from the throats of 14.25% of 800 children in this specific age group. A similar monthly isolation rate (14.16%) was obtained from the throats of 333 children in the same age range, from whom swabs were taken monthly for eight months. Of these 333 children, in 41.1% at least one culture during the eight-month school year showed presence of these organisms. In the same age group, the register revealed only three children with rheumatic disease and six with nephritis. Theref low incidence of reported attacks of the two d cannot be attributed to the absence of g streptococci in this region.

If the low reported frequency of rheumatic f Miami is specious and actually due merely mildness of attacks of the disease which re failure of the physicians to recognize the co observations at postmortem examinations should cardiac damage due to rheumatic disease in born Floridians more often than is reflected b clinicians' reports. However, Johnson and I[1] h demonstrated that autopsies performed on those had been born in Florida showed far fewer c lesions due to rheumatic disease than did autops those who had been born outside Florida.

Despite the high rate of recovery of group A hemolytic streptococci from the throats of c living in Miami, the case register of acute matic and nephritic episodes occurring durin course of the period Sept. 1, 1955, to Oct. 1, provides strong evidence of the infrequency o diseases.

The case register is a method of investiga incidence of these diseases which could be out in other geographical locations and environments, so that comparative studies m done with greater accuracy and ease than possible.

Summary

A registry was maintained of each episode o rheumatic fever and acute glomerulonephr Greater Miami, Fla., from Sept. 1, 1955, to 1956. Over 450 physicians and 13 hospital surveyed monthly.

Reported during the 13-month period were 1 attacks of rheumatic disease and 18 acute atta glomerulonephritis, either definite or suspect these, three cases of rheumatic disease and nephritis were reported in children aged 6 to 9. same age group, a concurrent study of group hemolytic streptococcic isolation rates reveal presence of these organisms in over 40% of the cultures taken from children attending Dade public schools.

The method of case registry employed pro means for comparing similar data collected in di geographical areas.

4250 Flagler St. (34).

This study has been supported in part by a U. S. Health grant.

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CLINICAL NOTES

THE UNRELIABILITY OF TACTILE TENSION

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and
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There is a widespread belief among the medical profession including some ophthalmologists that he determination of ocular tension by palpation hrough the lids offers a fairly reliable estimation f the level of intraocular pressure for the diagnosis f glaucoma. Numerous patients with failing vision re seen with irreparable glaucomatous damage to he optic nerve because of undiagnosed glaucoma. Most of these patients have open-angle or chronic imple glaucoma because the insidious nature of the disease had given them no warning. A significant number have lost visual field progressively because omeone missed the diagnosis by relying on the tacile method of estimating ocular tension. The normal intraocular pressure ranges up to about 27 mm. Hg as measured with the Schiøtz tonometer. In untreated cases of chronic simple glaucoma (open-angle) the tension usually runs higher than this. Although pressures in this condition may range up o 60 mm. Hg as measured with the Schiøtz tonometer, a majority are found to be in the range rom 28 to 35 mm. Hg. The patients whose intraocuar pressures fall in the latter group have pressures which are very close to normal.

Patients with narrow-angle glaucoma may have pressures above 80 mm. Hg during an acute attack. In the interval before or between attacks, the pressure is often found to be slightly elevated or even normal. It is in these near normal cases that accurate evaluation of the ocular tension becomes important for the diagnosis. Because tactile estimation of the ocular tension is widely done, an assessment of its accuracy is presented.

Tactile and Tonometric Findings

We were able to find one similar study[1] in the German literature. In this, tactile determinations of tension were made by five doctors on 316 eyes for a total of 1,000 determinations. These were then checked with the Schiøtz tonometer and the results evaluated. The authors found the average error expressed in per cent was ±33. Further analysis of their figures showed that the actual error in millimeters of mercury averaged 9.4 in eyes with low pressure and approached 4 in eyes with normal tension and that in the higher tension range 18.3 was the average.

It became evident that in the low-tension group the intraocular pressure was generally overestimated, while in the higher tension group it was underestimated, whereas, within the limits of the normal intraocular tension, the average estimated tactile tension was nearest to the tonometric finding. It should be pointed out that in this group of patients, which represented an average eye clinic population, there would be a relatively small percentage of glaucoma patients. Also, each of the five physicians making the tactile determinations averaged 200 such determinations and would presumably be able to improve his efficiency in this procedure.

Our study was similar except that 21 different examiners were asked to estimate the tension by tactile examinations on patients with glaucoma at the Research and Educational Hospitals and the Illinois Eye and Ear Infirmary of the University of Illinois, Chicago. For statistical purposes, each examiner was asked to give a numerical estimation in millimeters of mercury of his tactile tension finding. The findings on each patient were then checked with the Schiøtz tonometer, and the results were recorded. The doctors were not informed of the results of their determinations until they had finished their quota of patients so that they could not improve their ability by experiences gained during the determinations.

All patients examined had glaucoma or were strong glaucoma suspects. The vast majority were under treatment to reduce their ocular tensions. This fact was known to the examining physicians. Our examiners for the most part were ophthalmologists of varying degrees of experience. Included in the group were two full professors of ophthalmology, three assistant professors of ophthalmology, three clinical assistant professors, four clinical instructors or clinical assistants, five residents in ophthalmology, one intern rotating on the eye service, one resident in the department of medicine, and two senior medical students. Of this group, several are deservingly considered authorities on the subject of glaucoma.

Results

Five hundred twenty-four eyes were examined in this manner. The average of Schiøtz tensions of patients seen in the glaucoma clinic during the study was 25.2 mm. Hg with a range from 5 to 66 mm. Hg.

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Table 1 gives a summary of our results. The number of eyes examined by each physician is listed in the second column and depended primarily on the physician's availability at the time the tests were being done. The third column represents the mean deviation of each physician's estimate from the tonometer reading. For example, a physician who called one eye tension 10 points higher than a tonometer reading showed and another one 8 points lower would have a mean deviation of 18/2 or 9 mm. Hg for these two determinations. The mean deviation varied from 1.4 mm. Hg for one of the clinical assistants of ophthalmology (L) (only 8 eyes tested, all of which were in the normal range tonometrically) to 11.4 mm. Hg for one of the senior medical students (T).

This ability to accurately diagnose the tension tactilely did not seem to depend on the physician's experience, since the authorities in the field did more poorly than the ophthalmology residents. It did to a certain extent depend upon the number of eyes with high tension which each examiner happened to get. There was noted a tendency to be more in error on the eyes with higher tension. The over-all mean deviation weighted for the number of eyes examined by each physician was 6.8 mm. Hg.

The fourth column represents the standard deviation of each examiner from the tonometric reading. The bottom figure in this column is the standard deviation of all the estimations from the tonometric finding. The last column, indicating the maximum deviations both on the high side and on the low side of the Schiøtz reading, shows considerable individual variation even for each doctor. The average of these extremes is at the bottom of this column. All physicians averaged an error of 15 mm. Hg on the high side and 19 mm. Hg on the low side; the poorest evaluation of the intraocular tension. The extremes for the group were +26 and – mm. Hg.

Pressures Thought by Palpation to Be Elevated.—We were interested in finding how accurate a physician was in those cases in which he felt by palpation that the pressures were elevated. Of the 1 eyes which the examining physicians felt the pressure was 28 mm. Hg or over by tactile tension determination alone, only 67 (36%) were found by the tonometer to have elevated pressures. Tonometric determinations showed that pressure in the remaining 119 (64%) eyes was actually 27 mm. Hg or less. Of this group, 89, or 48%, were 25 mm. Hg or less; 50, or 27%, were 20 mm. Hg or less; and 14, or 8%, were 15 mm. Hg or less. In this group there was a marked tendency to overestimate the tension, giving 48 to 64% false positives, depending on the dividing line of what might be considered an abnormally high and a normal tension. Using a more conservative figure of 20 mm. Hg or under by the tonometer as pressure in an eye beyond suspicion of glaucoma, we found that the pressure in 27% of the eyes was erroneously diagnosed by tactile tension as being elevated.

Table 2 illustrates the 14 cases in which the pressure was estimated tactilely as being 28 mm. Hg or over and was found by the tonometer to be under 15 mm. Hg. We see in this group that there was a general distribution of the examining doctors who were overconservative in their estimation of the tension; that is, they were more inclined to call pressure in an eye elevated rather than risk missing an elevated pressure by being more conservative

Table 1.—*Results of Tactile Examination on Fifty-two Eyes*

	Physician	Eyes Examined, No.	Mean Deviation of Physician's Estimate from Tonometric Reading, Mm. Hg	Standard Deviation of Physician's Estimate from Tonometric Reading, Mm. Hg	Range of Deviation
A	Professor of Ophthalmology	12	7.7	9.7	+23 to –16
B	Professor of Ophthalmology	43	8.0	11.8	+20 to –37
C	Assistant Professor of Ophthalmology	16	7.7	9.6	+17 to –23
D	Assistant Professor of Ophthalmology	32	7.8	10.4	+18 to –36
E	Assistant Professor of Ophthalmology	20	5.6	7.0	+18 to –10
F	Clinical Assistant Professor of Ophthalmology	30	9.1	10.7	+18 to –23
G	Clinical Assistant Professor of Ophthalmology	16	7.4	9.5	+15 to –25
H	Clinical Assistant Professor of Ophthalmology	18	5.1	6.0	+12 to – 4
I	Clinical Instructor of Ophthalmology	27	8.1	9.5	+18 to –20
J	Clinical Instructor of Ophthalmology	26	8.2	7.6	+10 to –26
K	Clinical Assistant of Ophthalmology	32	5.0	5.8	+12 to –12
L	Clinical Assistant of Ophthalmology	8	1.4	2.0	+ 2 to – 4
M	Resident in Ophthalmology	40	6.1	7.1	+12 to –14
N	Resident in Ophthalmology	12	3 5	5.4	+14 to –10
O	Resident in Ophthalmology	18	5.2	6.6	+ 5 to –13
P	Resident in Ophthalmology	29	5.0	8.3	+13 to –15
Q	Resident in Ophthalmology	22	4.7	6.7	+20 to –13
R	Intern in Ophthalmology	26	6.2	9.2	+ 4 to –31
S	Senior Medical Student	22	9.1	10.9	+31 to –10
T	Senior Medical Student	22	11.4	13.4	+26 to –11
U	Medical Resident	23	7.5	9.8	+15 to –28
	Totals	524	6.8	9.2	+15 to –19

The results of this group indicate that, knowing that these patients had glaucoma, there was a tendency to estimate the tensions too high.

Pressures Found by Tonometer to Be Elevated.—We were interested in finding how accurate the physicians were in estimating eye pressure found to be elevated by the tonometer. There were 141 patients who were found by a Schiøtz tonometer to have a tension in the eyes of 28 mm. Hg or over. The pressure in only 66 (47%) eyes was correctly estimated as being elevated to 28 mm. Hg or over. The remaining 75 (53%) eyes were estimated to have pressures of 27 mm. Hg or less on tactile examination by the examining physicians. Of this group, 56, or 40%, had pressures of 25 mm. Hg or less; 26, or 18%, 23 mm. Hg or less; and 13, or 9%, 20 mm. Hg or less. Depending on where we consider the dividing line between a normal and a suspicious tactile tension reading, we can say that 40 to 53% of the patients who had pressures of 28 mm. Hg or over (therefore, presumably glaucomatous) were missed by tactile determination. To take a more reasonable figure, 18% were missed if we consider a tension of 23 mm. Hg or under beyond suspicion of glaucoma, while 9% represent serious misses by anyone's standards.

Table 3 illustrates those serious errors in which the tension was 28 mm. Hg or over by the Schiøtz tonometer and called 20 mm. Hg or under tactilely. By any ophthalmologist doing tonometry only when the pressure was felt to be elevated or suspicious, these would all represent serious oversights of glaucoma cases. The psychological factor cannot be estimated quantitatively but must operate here to make these percentages unusually small. That is, the fact that the physician knew that these patients had glaucoma or were glaucoma suspects would tend to lead to a higher tactile reading. We feel that in routine office practice where the incidence and, therefore, the index of suspicion for glaucoma would be less that many more cases of glaucoma would be missed by diagnosis by tactile tension alone.

TABLE 2.—*Fourteen Cases of Low Intraocular Pressure in Which the Pressure Was Erroneously Estimated**

Physician†	Actual Mm. Hg by Schiøtz Tonometer	Estimated Tension Tactile Method, Mm. Hg
A	13	28
	13	35
	13	35
	13	30
C	13	30
D	15	30
	13	28
E	14	32
F	13	30
G	15	28
	15	30
I	15	28
N	9	40
T	9	35

* Erroneously estimated by palpation as over 28 mm. Hg.
† See table 1 for explanation of letters.

Comment

These findings are consistent with the belief shared by the vast majority of ophthalmologists interested in the problem of glaucoma that tactile tension has a high degree of unreliability. This is so great, even among ophthalmologists with much experience in the field of glaucoma, that routine tonometry should be substituted for tactile tension determinations in all patients over 40 years of age entering the office. The prevalence of undetected glaucoma in the population over 40 years of age (2%)[2] suggests that routine tonometry should be part of the general physical examination much in the same way that routine chest x-rays or routine urinalysis is done. This has been suggested by Berens and Tolman[3] and others.[4] In patients over 40 years of age, the general physician is obligated either to take the tension himself with a Schiøtz tonometer or with the new Berens-Tolman screening tonometer now available for the general practitioner or to see that his patients get to an ophthalmologist who will do routine tonometry in the course of an examination for glasses. Our results indicate that tactile tension is no substitute for routine tonometry.

TABLE 3.—*Thirteen Cases of Elevated Intraocular Pressure in Which the Pressure Was Erroneously Estimated**

Physician†	Actual Mm. Hg by Schiøtz Tonometer	Estimated Tension Tactile Method, Mm. Hg
B	32	20
B	34	20
B	32	18
B	37	18
B	50	18
P	30	17
L	32	20
L	34	20
Q	34	20
R	30	20
N	29	18
S	29	15
T	31	18

* Erroneously estimated by palpation as under 21 mm. Hg.
† *See table 1 for explanation of letters.*

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DEATH FROM INTRA-ABDOMINAL HEMORRHAGE SIMULATING REACTION TO CONTRAST MEDIUM

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In recent years a number of reports[1] have appeared implicating intravenously administered contrast mediums in urography as the cause of death in patients. The present report is made because it demonstrates the problem which may arise in differentiating clinically between an acute reaction due to the injection of contrast material from other conditions which it may simulate. In certain respects the following case is similar clinically to some in which death has been reported as due to contrast mediums although reasonable proof was not available to establish the exact mechanism of death. On the other hand, the present findings were also very much like those in other instances in which autopsy was done and death seemed definitely attributable to the contrast medium.[2]

Report of a Case

A 28-year-old male was admitted to Memorial Center for treatment of generalized metastases. Approximately one month previously at another hospital an exploratory laparotomy had disclosed a nonresectable, retroperitoneal tumor, the biopsy sections of which were interpreted as choriocarcinoma by Dr. F. Foote. In the interim, liver enlargement was detected and there was x-ray evidence of pulmonary metastases. On admission to Memorial Center the patient was anemic, but there was no suspected or known bleeding source. The hemoglobin level was reported as 8.2 Gm. per 100 cc., bleeding time 22 seconds, and clotting time 9½ minutes. The patient was given blood transfusions and other supportive therapy, and then, three days after admission, he was sent to the x-ray department for an excretory urogram.

A preliminary conjunctival test for sensitivity was negative. Approximately five minutes after the intravenous injection of 30 cc. of sodium diatrizoate the patient developed epigastric pain, perspired profusely, became dyspneic and cyanotic, and was found to be in shock. It was believed that the sudden onset of this acute state probably represented a severe reaction to the contrast medium. Therefore, he was promptly given diphenhydramine hydrochloride and epinephrine, with very little or no clinical improvement but with some rise in blood pressure. After his return to the ward he was given oxygen, arterenol (norepinephrine), hydrocortisone, and tripelennamine (Pyribenzamine), with return of blood pressure to normal and some clinical improvement. Subsequently, however, his condition rapidly deteriorated and he died in shock about four hours after the onset of the acute episode.

At autopsy and histological examination the diagnosis of retroperitoneal choriocarcinoma was verified by the department of pathology. Bloody fluid estimated at 3,500 cc. was present in the peritoneal cavity. There were multiple hemorrhagic nodules in the liver, the largest of these measuring 7 cm. in diameter. A rent was found in this nodule out of which blood gushed when the liver was compressed. It was established that death was due to spontaneous rupture of this metastasis with massive hemorrhage. Blood was found in the small intestine, but its exact source was not determined. Its entry by means of the bile ducts was postulated.

Summary

A death occurred in which the clinical picture was similar to cases wherein death was attributed to intravenous injection of contrast mediums. In this instance, however, the cause of death was proved to be hemorrhage from a liver metastasis.

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Liver with metastatic deposits.

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From the Department of X-ray Diagnosis and the Chemotherapy Service, Memorial Center for Cancer and Allied Diseases.

SPECIAL ARTICLE

Early in 1957 the Project Advisory Committee of the Joint Blood Council initiated a postal card survey designed mainly to ascertain the extent that human blood is used for medical purposes in the continental United States and in the territories and possessions. Leonard W. Larson, M.D., Bismarck, N. D., president of the Council, had previously appointed Frank E. Wilson, M.D., Washington, D. C., the executive vice-president, as chairman of the committee, and the following other members, representing the five organizations that joined together in 1955 to establish the Council: for the American Association of Blood Banks, James J. Griffitts, M.D., Miami, Fla.; American Hospital Association, Roger W. DeBusk, M.D., Detroit; American Medical Association, Max M. Strumia, M.D., Bryn Mawr, Pa.; American National Red Cross, David N. W. Grant, M.D., Washington, D. C.; American Society of Clinical Pathologists, Kenneth M. Brinkhous, M.D., Chapel Hill, N. C. Dr. Larson also appointed George W. Hervey, Sc.D., Red Cross national headquarters, Washington, D. C., and Frank G. Dickinson, Ph.D., American Medical Association, Chicago, as consultants.

Dr. Wilson functioned as director of the survey and Commander Paul T. Rees, U. S. N. (Retired), Washington, D. C., of the Council's staff, as associate director.

The ensuing report contains abundant authoritative information to invite the attention of agencies engaged in blood procurement and distribution, the medical and public health professions, and organizations and individuals interested in blood as a national resource.

BLOOD TRANSFUSIONS IN THE UNITED STATES

Background

Any committee that essays to discuss the subject of blood procurement in the United States faces an anomalous situation. Across the United States the machineries for collecting, processing, and distributing blood for medical use are either community sponsored or so organized as to create a certain awareness that these machineries function in the public welfare. Yet on a specified day the individuals who give blood represent only a minor portion of the people whose age range and health would allow them to qualify. Those who do present themselves are predominantly men, most of whom have donated previously—not unusually three, four, or more times. Despite weaknesses in the donor recruitment systems, resulting in the very few carrying the burden for the many, the established agencies by hard work have managed to perform their economic mission.

Seasonal factors and inventories which are short with respect to blood of a particular group and type may cause occasional, temporary disruptions to the supply, but by and large the distributors are able to meet the requests for blood, which come chiefly from hospitals. (Here the word hospital means, without qualification, an institution in which patients receive medical or surgical care. A comparatively small quantity of blood is used in physicians' offices. The data reported to the Joint Blood Council probably include most of such blood. Frequently a user bears a physician's name, followed by "Hospital" or "Hospital and Clinic.") That demand has grown, probably less through increased blood usage per hospital or per bed and more through expanded facilities, that is, new hospitals and enlargement of old.

During the six years which have elapsed since the American Medical Association published national survey figures,[1] various writers and speakers at medical meetings have speculated on the total quantity of blood used. In this question and in sundry details connected therewith the Joint Blood Council has maintained a special interest. A year ago the Council authorized its Project Advisory Committee to lay plans for ascertaining by a comprehensive schedule needed facts concerning technical procedures, personnel policies, donor recruitment, reciprocity, and other facets of transfusion services, whatever their type.

Before embarking on such an extensive investigation, however, the Council instructed the committee to send a postal card inquiry to all known hospitals in the continental United States and in the territories and possessions. Simply framed, the questions on the card aimed at determining (1) how many transfusions were given in the calendar year 1956; (2) the sources of the blood supply; and (3) the proportionate supply (percentage) from each source. In addition, the smaller inquiry promised to afford a suitable basis for determining which hospitals should later receive the detailed schedule. After several months preparation, includ-

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A report by the Project Advisory Committee of the Joint Blood Council, Washington, D. C.

ing consultation with numerous advisors, the committee, in August, 1957, *distributed* the schedules printed for the Council's more comprehensive project, work on which will continue well into 1958. (The project is being supported in part by a research grant, W-76, from the Division of Hospital and Medical Facilities, U. S. Public Health Service. The separate postal card inquiry reported upon herein was likewise supported by the same grant.)

Material

For mailing purposes the committee utilized lists published by five different organizations,[2] an unpublished list made available to the Council, and metropolitan telephone directories. Altogether the Council's initial roster contained nearly 9,600 hospital names and addresses. Correspondence subsequently revealed that many hospitals (small, nongeneral) used no blood or had "gone out of business." A few missed earlier turned up. On finishing the revision, 8,568 remained as the pertinent total for the continental United States and 127 for the territories and possessions. Inasmuch as preparation of the final roster entailed the expenditure of considerable time and labor, these figures can be accepted as practically correct for the year 1956.

On Jan. 4, 1957, the postal cards were sent to all the hospitals. Those that came back containing the requested data the staff allocated to categories *corresponding to the sources of blood supply.* Printed identifying letters and definitions had enabled the respondents actually to do their own coding; hence the acquired material, except for minor editing, was already adapted to the following classification of blood sources: (A) blood collected by reporting facility; donors not paid; (B) hospital other than reporting facility; (C) Red Cross regional center; (D) community or nonhospital blood bank; (E) commercial blood bank; and (F) paid donors; blood collected by reporting facility.

As printed on the distributed cards, E and F were together in one class. When in that category and no commercial blood bank was named, the respondent usually stated that the donors were paid directly. Since the data for the two categories were so distinct, E and F are treated separately in this report.

The form in which respondents furnished the data compelled the staff to convert supply percentages to absolute figures. Several queries have raised the question of why the committee wanted to know the aggregate transfusions in each hospital and then, seemingly inconsistent, requested percentages for the component supply elements. Unquestionably, the chosen device helped to prevent reporting on the pints of blood received from a distributor or, in some instances, blood collections. The adopted safeguard permitted summarizations to be made more consistently accurate, strictly in terms of usage.

Transfusions: Continental United States

The sample represented every state and the District of Columbia and formed an excellent basis for making national estimates. In the continental United States as a whole, 4,920 hospitals, or 57.4%, sent in their figures. Notwithstanding this favorable return, and most essential to a proper understanding of the assembled data, the sample by no means can be considered to have been random. Hospitals that used blood more or less routinely, whenever patients' requirements dictated, took pride in their records and reported; whereas those where blood therapy was less routine answered in fewer number. No other construction can be placed on the apparent differences between respondents and nonrespondents.

The transfusions reported on the cards exceeded 3,500,000, a total large enough to render the acknowledged bias, caused by the proportionately greater usage by respondents than nonrespondents, harmless to the task of projecting the figures. For statistical control purposes, blood usage data for the year 1956 provided by the American National Red Cross served adequately, forming the groundwork for requisite preliminary calculations. After completing initial extensions for the nine geographical divisions adopted for publications by the U. S. Bureau of the Census, including state estimates, the staff consulted several advisors who *promptly* supplied data for effecting adjustments. Finally, revision in the light of this assistance placed *the estimate for the continental United States at 4,585,000 transfusions. A published total greater* than this number would rest on a poor foundation.

Currently a need *exists for mass data on* number of transfusions per patient. Assuming 2.3 transfusions (the figure employed at present for calculating purposes), the survey returns therefore indicate that in 1956 the persons who received blood therapy totaled approximately 1,993,500. Manifestly, the supply required for that large number was not the total supply involved in the year's operations. For the purpose of making a procurement estimate in the interest of completeness, the committee after careful study decided that an extra 9% would be a satisfactory allowance. Included in the supply for meeting a subsidiary demand was the blood utilized for preparing plasma and derivatives and a further portion that went into the "pipe line." This includes commonly quantities collected but not yet processed, processed and awaiting distribution, unused on refrigerator shelves in hospitals, and in transit between facilities. In rounded figures all the additional components probably brought the total collections up to 5 million pints.

Having dealt with a sample covering an estimated 78% of the entire expressed demand, and having bridged the remaining 22% to arrive at 4,585,000 transfusions, the committee has established a new base for such defense and other planning that recognizes blood as a most important national resource. Not to be disregarded, however, are the details that lie beneath the total. For example, 45% of the hospitals reporting to the committee were in the class "under 200 transfusions" (of the total hospitals reporting, 22% were in the class "under 50 transfusions;" these hospitals accounted for only 0.5% of total blood usage), yet the same hospitals accounted for only 4% of total usage. Some believe that too often in the past estimators have ascribed disproportionate weight to the blood usage in some teaching hospitals and in others where surgical patients are relatively numerous. Projections from such data have led to the exaggerated totals which have appeared in print, especially over the last two years. An effective brake on extravagant claims now emerges from the plain fact that in the United States small blood users predominate numerically. Table 1 gives the evidence.

TABLE 1.—*Continental United States: Hospitals and Transfusions Covered by Sample, and Corresponding Estimates, by Blood Usage Classes*

	Sample				Continental United States, Estimated			
	Hospitals		Transfusions		Hospitals		Transfusions	
Usage Class (Transfusions)	No.	% of Total	No.	% of Total	No.*	% of Total	No.	% of Total
Under 200	2,218	45.1	143,814	4.0	4,442	52.0	254,200	5.5
200-399	734	14.9	208,603	5.8	1,358	15.8	355,000	7.7
400-599	431	8.8	210,645	5.9	829	9.7	418,300	9.1
600-799	275	5.6	190,447	5.3	300	3.5	203,700	4.5
800-999	208	4.2	185,336	5.2	404	4.7	370,000	8.1
1,000-1,999	545	11.1	764,855	21.4	683	8.0	972,500	21.2
2,000-2,999	254	5.2	616,356	17.2	276	3.2	663,100	14.5
3,000-3,999	110	2.2	373,725	10.4	112	1.3	380,400	8.3
4,000-4,999	69	1.4	304,530	8.5	88	1.0	385,100	8.4
5,000-5,999	30	.6	162,049	4.5	30	.3	162,000	3.5
6,000-6,999	17	.3	109,388	3.1	17	.2	109,400	2.4
7,000 & over†	29	.6	311,313	8.7	29	.3	311,300	6.8
All classes	4,920	100.0	3,581,061	100.0	8,568	100.0	4,585,000	100.0

* Total of 8,568 hospitals is actual; all other entries in this column are estimates.

† Maximum reported, 20,794.

Sources of Supply

To persons concerned with the question of how much the country's blood collection facilities could expand in the event of a serious national emergency, the relative importance that can be attached to each previously defined supply category has long been a matter of conjecture. Without doubt, civilian blood procurement from its beginning in the years immediately following World War II to the present time never has developed according to a comprehensively systematic pattern. Throughout the Council's data individuality recurs: decided differences appear in the type of facilities preferred by, or available to, scores of communities.

Partly the variation inherent in the reported material denotes sectional attitudes toward who should or should not be engaged in collecting blood. Frequently the facilities began to function under local auspices uninfluenced by any ingrained prejudice on the part of sponsors, and became successful after an uphill struggle that eventually overcame public apathy. During the survey, quite a few administrators of small hospitals which obtain blood through their own efforts asserted that the committee's request for data had awakened them to the need for keeping accurate transfusion records. Their appreciative response suggests that they might be interested in maintaining closer working relationships, notably in the matter of blood reciprocity, with the larger and more experienced facilities. The use of blood in the United States has reached a level where, to do a good job, all the distribution agencies are through force of circumstances interdependent notwithstanding variegated operational philosophies. Unfortunately the gross transfusion totals determined for the component supply classes (table 3) tend to obscure this truth.

The data for the respective source categories permit the following digest (table 2); (A) Category A accounted for more than one-third (36%) of all blood transfused in 1956. Neither Red Cross regional centers nor community blood banks of any type were distributors. Nor did the using hospitals depend on other hospitals for their supply in emergencies or otherwise.

(B) The figures on category B are the first ever developed to reveal the extensiveness of a little known practice. Numerous small hospitals borrow, and perhaps sometimes buy, blood from other small hospitals when emergencies occur; in 1956 the quantities involved provided the supply for an estimated 95,000 transfusions. Another group, consisting of 13 larger hospitals, furnished the blood for an additional 70,000 transfusions. Presumably the latter distributors paid their donors. Therefore, to obtain the maximum possible measure of paid donors in the blood economy, one should add 70,000 to the totals shown for categories E and F. Considered alone, the facilities in category B provided less than 4% of the total supply.

(C) Category C, the American Red Cross, furnishing the blood for 38% of the transfusions in 1956, exceeds category A by a narrow margin. Unpaid volunteers donate the supply distributed from the organization's 50 regional centers. Relatively speaking, New England shows the greatest utilization of the Red Cross service and the West South Central Division the least.

(D) Community or nonhospital blood banks, also functioning on a nonpayment system, furnished the blood for 9.5% of the transfusions in 1956. These facilities operate on a larger scale in the Pacific, Mountain, and South Atlantic Divisions than elsewhere.

(E) Commercial blood banks, attaining greatest strength in the West South Central Division, furnish nearly one-third of the supply therein. Nationally the facilities in this category ranked above the nonhospital community blood banks in 1956, making available 11% of the quantity used by hospitals.

TABLE 2.—*Continental United States: Number of Hospitals That Use Blood and Estimated Transfusions Therein, Sh According to Sources of Blood (Categories), by Census Divisions and States, Calendar Year 1956* *(Estimated transfusions based on total sample covering 4,920 hospitals and 3,581,061 transfusions)*

Division and State	Hospitals, No.	Transfusions for Which Blood Received from Source, No. A	B	C*	D	E	F	Aggregate Transfusions, All Sources
New England:								
Maine	68	16,000	1,000	300	...	100	2,400	19,800
New Hampshire	42	400	200	15,600	...	...	...†	16,200
Vermont	28	100	...	11,200	...	...	...	11,300
Massachusetts	306	72,300	9,400	77,000	...	1,500	5,700	165,900
Rhode Island	34	16,500	2,700	300	...	500	800	20,800
Connecticut	90	8,100	1,800	73,900	...†	...	...	83,800
	568	113,400	15,100	178,300	...†	2,100	8,900	317,800
Middle Atlantic:								
New York	605	96,600	41,000	215,000	33,400	49,600	14,600	450,200
New Jersey	182	66,100	3,100	19,700	14,400	16,800	2,300	122,400
Pennsylvania	393	149,100	1,400	129,500	22,900	14,500	4,600	322,000
	1,180	311,800	45,500	364,200	70,700	80,900	21,500	894,600
East North Central:								
Ohio	314	92,900	13,100	128,900	3,000	5,700	5,400	249,000
Indiana	162	60,500	2,000	21,800	6,300	4,100	2,800	97,500
Illinois	396	134,100	33,400	53,100	2,900	38,900	3,100	265,500
Michigan	369	69,200	6,900	103,100	500	39,600	2,900	222,200
Wisconsin	225	13,900	800	40,400	40,800	...†	200	96,100
	1,466	370,600	56,200	347,300	53,500	88,300	14,400	930,300
West North Central:								
Minnesota	240	27,600	2,300	41,400	22,600	2,200	6,000	102,100
Iowa	166	27,500	600	10,900	6,300	4,000	10,000	59,300
Missouri	232	52,300	1,900	57,300	...	3,300	1,800	116,600
North Dakota	64	9,500	500	200	1,800	100	1,800	13,900
South Dakota	72	10,000	1,800	400	...†	1,500	200	13,900
Nebraska	143	6,700	500	29,900	...†	...†	600	37,700
Kansas	176	19,000	300	31,500	...†	5,000	1,000	56,800
	1,093	152,600	7,900	171,600	30,700	16,100	21,400	400,300
South Atlantic:								
Delaware	22	11,000	300	200	300	1,000	1,100	13,900
Maryland	97	37,400	1,400	15,900	...†	900	200	55,800
District of Columbia	27	16,100	200	37,900	...	...	...	54,200
Virginia	140	20,400	2,600	65,900	1,500	3,200	2,600	96,200
West Virginia	112	25,700	700	15,600	...	4,800	400	47,200
North Carolina	218	63,200	600	51,700	...	4,800	1,800	122,100
South Carolina	94	24,400	300	28,300	...	2,400	...	55,400
Georgia	214	42,400	5,300	57,200	...†	1,100	1,400	107,400
Florida	187	25,800	600	3,600	65,100	19,100	...†	114,200
	1,111	266,400	12,000	276,300	66,900	37,300	7,500	666,400
East South Central:								
Kentucky	149	21,200	1,100	40,600	...	6,100	200	69,200
Tennessee	200	53,200	3,500	28,000	100	24,200	3,400	112,400
Alabama	192	26,500	400	46,600	300	2,500	3,300	79,600
Mississippi	136	20,700	500	10,500	1,700	6,100	800	40,300
	677	121,600	5,500	125,700	2,100	38,900	7,700	301,500
West South Central:								
Arkansas	94	27,100	1,000	4,400	100	4,500	300	37,400
Louisiana	153	55,000	6,300	100	2,300	8,100	5,800	77,600
Oklahoma	172	14,700	1,200	14,800	400	9,500	200	40,800
Texas	643	88,100	5,000	9,200	14,900	93,500	2,800	213,500
	1,062	184,900	13,500	28,500	17,700	115,600	9,100	369,300
Mountain:								
Montana	77	6,500	...†	10,800	...	...†	200	17,500
Idaho	58	3,000	100	11,300	...†	...	...†	14,400
Wyoming	34	2,700	...	...†	...	1,200	...	3,900
Colorado	122	29,300	1,600	...†	37,700	...	1,700	70,300
New Mexico	77	2,100	600	...†	...	13,300	300	16,300
Arizona	86	1,100	...†	12,000	100	21,600	...†	34,800
Utah	52	15,800	300	9,300	100	...	300	25,800
Nevada	19	3,600	900	800	...	9,200	...	14,500
	525	64,100	3,500	44,200	37,900	45,300	2,500	197,500
Pacific:								
Washington	161	9,300	1,900	16,000	57,300	...	...†	84,500
Oregon	101	1,600	...†	46,400	4,600	...†	400	53,000
California	624	59,300	3,900	139,600	93,300	70,900	2,800	269,800
	886	70,200	5,800	202,000	155,200	70,900	3,200	507,300
All divisions and states	8,568	1,655,600	165,000	1,738,100	434,700	495,400	96,200	4,585,000

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* Each figure shown in this column denotes actual number of transfusions (to nearest 100) as reported to the national headquarters of the Americ Red Cross.

† Fewer than 50.

(F) Donors who receive direct payment from hospitals trail behind all the other supply sources except in the West North Central Division, where, in 1956, they provided more blood than did the commercial blood banks. Altogether, the blood for only 2% of all transfusions was obtained from this source.

To avoid questions that may be raised on the ground that the above proportions tell only a partial story, the committee should state its awareness that in several sections of the country hospitals that procure blood themselves have at their disposal equipment (and, in some instances, personnel) provided by other facilities. How extensive the practice may be must remain a matter for later determination. The report on the council's extensive research project, mentioned earlier, will deal with the subject of auxiliary assistance; the postal card survey was concerned only with where the facilities obtained blood and how much.

Table 3.—*Continental United States: Number of Transfusions Covered by Sample and Corresponding Estimates, Shown According to Sources of Blood (Categories), by Census Divisions*

Division	A	B	C*	D	E	F	Aggregate Transfusions, All Sources
	No. Reported: Sample — Transfusions for Which Blood Received from Source						
New England	80,702	10,783	126,967	22	1,542	6,360	226,376
Middle Atlantic	256,761	37,498	300,001	58,249	66,639	17,776	736,924
East North Central	266,963	40,497	250,179	41,217	63,680	10,346	672,882
West North Central	124,125	6,294	139,556	24,990	13,038	17,480	325,483
South Atlantic	209,565	9,391	217,325	52,633	29,399	5,948	524,261
East South Central	90,612	4,161	95,582	1,602	28,836	5,847	226,640
West South Central	164,040	11,894	25,300	15,688	75,234	8,029	300,185
Mountain	54,075	3,011	37,286	31,953	28,526	2,208	157,059
Pacific	59,013	4,894	169,563	130,363	44,678	2,740	411,251
All divisions	1,305,856	128,423	1,361,759	356,717	351,572	76,734	3,581,061
	Estimated Total No.						
New England	113,400	15,100	178,300	......†	2,100	8,900	317,800
Middle Atlantic	311,800	45,500	364,200	70,700	80,900	21,500	894,600
East North Central	370,600	56,200	347,300	53,500	88,300	14,400	930,300
West North Central	152,600	7,900	171,600	30,700	16,100	21,400	400,300
South Atlantic	266,400	12,000	276,300	66,900	37,300	7,500	666,400
East South Central	121,600	5,500	125,700	2,100	38,900	7,700	301,500
West South Central	184,900	13,500	28,500	17,700	115,600	9,100	369,300
Mountain	64,160	3,500	44,200	37,900	45,300	2,500	197,500
Pacific	70,200	5,800	202,000	155,200	70,900	3,200	507,300
All divisions	1,655,600	165,000	1,738,100	434,700	495,400	96,200	4,585,000
	Estimated Percentage						
New England	35.7	4.8	56.1	...	0.6	2.8	100.0
Middle Atlantic	34.9	5.1	40.7	7.9	9.0	2.4	100.0
East North Central	39.8	6.0	37.3	5.8	9.5	1.6	100.0
West North Central	38.1	2.0	42.9	7.7	4.0	5.3	100.0
South Atlantic	40.0	1.8	41.5	10.0	5.6	1.1	100.0
East South Central	40.3	1.8	41.7	0.7	12.9	2.6	100.0
West South Central	50.0	3.6	7.7	4.8	31.5	2.4	100.0
Mountain	32.4	1.8	22.4	19.2	22.9	1.3	100.0
Pacific	13.8	1.1	39.9	30.6	14.0	0.6	100.0
All divisions	36.1	3.6	37.9	9.5	10.8	2.1	100.0

* For middle section of table, each figure shown in this column denotes actual number of transfusions (to nearest 100) as reported to the national headquarters of the American Red Cross.

† Fewer than 50

Procurement Practices

While the above proportions delineate the comparative gross importance of each supply category, the reader should avoid concluding that in their blood procurement practices the users segment completely into mutually exclusive classes. Under an entirely separated system the hospitals in one group would universally rely on source A, a second group on source B, etc. From the sample data the committee finds that slightly more than half (52.5%) obtained their supply in 1956 from single-category sources; and the transfusions in the same hospitals amounted to little more than one-third (34%) of the total reported. Foremost among the users who obtained blood from more than one source were those partly dependent on Red Cross and partly on unpaid donors, recruited with or without the assistance of local organizations. Table 4 shows the more prevalent practices. The source category designated "Other" which embraces no less than 21 different types of source combinations offers prominent evidence that diversity characterizes the procurement.

Lacking in this particular case a sound basis for projecting the figures to the remaining 3,648 hospitals (nonrespondents), the committee refrains from going beyond the sample. The reviewed material proves adequate for supporting a contention that no class of blood supplier in the continental United States stands alone in a monopolistic sense. All the classes are to a very considerable extent functioning in concert with, or complementing, each other in rendering service.

Transfusions: Territories and Possessions

In reporting the subject of transfusions in preceding paragraphs, the committee has purposely withheld comment on the splendid services performed in the territories and possessions. Their reported figures are more complete than those from the continental United States. In the territories and possessions 127 hospitals known to use blood were sent the same postal card inquiry. Of this total, 92 responded—a 72% return.

Information gathered through supplementary correspondence, and completed cards from all the listed hospitals in Guam and the Canal Zone, enabled the committee to set the aggregate number of transfusions at 48,200. This return is 87% of all transfusions given in the territories and possessions compared with 78% for the continental United States.

In Hawaii one large nonhospital community blood bank furnished all but a very minor portion of the blood used. Unpaid donors evidently recruited by the hospitals furnished practically the entire supply in Alaska. In Puerto Rico the distribution exemplifies complementary action: hospitals obtained 61% on their own initiative; a blood bank connected with a medical school furnished 28%; and commercial blood banks and paid donors most of the remainder. Unpaid donors were the sole supply source in the Virgin Islands and the dominant source in Guam and the Canal Zone. No blood came from the Red Cross centers, which are on the mainland.

Figuring an average of 2.3 transfusions per patient as before, 20,950 persons received blood therapy. To estimate total procurement, the 9% above transfusions employed for the continental United States would be too much. Here the committee believes that 5% would be a more realistic allowance, bringing the grand total of collections to 50,600 pints.

Table 4.—*Continental United States: Hospitals Covered by Sample Distributed According to Sources of Blood (Categories), and Corresponding Transfusions*

Source, Supply Category	Hospitals Which Obtained (and used) Blood		Transfusions	
	No.	% of Total	No.	% of Total
A	753	15.3	295,067	8.2
B	268	5.4	37,752	1.1
C	975	19.8	472,810	13.2
D	334	6.8	288,554	8.1
E	204	4.1	128,388	3.6
F	52	1.1	3,312	0.1
ABC	171	3.5	194,510	5.4
ABCE	126	2.6	284,121	7.9
AC	740	15.0	591,850	16.5
ACE	195	4.0	481,670	13.5
AE	230	4.7	165,209	4.6
Other	872	17.7	637,818	17.8
All sources	4,920	100.0	3,581,061	100.0

Combining the figures for inside and outside the continental United States, the estimated national totals for 1956 indicate (in rounded numbers) that physicians gave 4,633,000 transfusions to 2 million patients and that the facilities engaged in procurement collected 5,100,000 pints of blood. Since conditions will change with the passage of time, the committee believes that another survey should be made four or five years hence.

Table 5.—*Territories and Possessions: Hospitals and Transfusions Covered by Sample, and Corresponding Extensions to Totals Therein Shown for Each Designated Territory and Possession*

Territory or Possession	Sample, No.		Total No.	
	Hospitals	Transfusions	Hospitals	Transfusions, Estimated
Territory:				
Alaska	18	4,068	24	4,700
Hawaii	31	16,512	33	16,700
Possession:				
Guam	2	1,660	2	1,660*
Canal Zone	1	1,329	1	1,329*
Puerto Rico	38	18,232	62	23,400
Virgin Islands	2	182	5	400
All territories and possessions	92	41,983	127	48,189

* Actual figure; data completely reported.

Summary

The preceding text sets forth the results of a postal card survey conducted by the Project Advisory Committee of the Joint Blood Council in order to develop nationally needed facts concerning the number of blood transfusions in the calendar year 1956. Prior to the survey, the Council's staff had determined that the hospitals which use blood number 8,568 in the continental United States and 127 in the territories and possessions.

Seasonal factors and inventories which are short with respect to blood of a particular group and type may cause occasional, temporary disruptions to the blood supply, but by and large a sufficient quantity becomes available to meet the expressed demand. Civilian blood procurement, from its beginning in the years immediately following World War II to the present time, never has developed in a systematic pattern. Regional collection centers maintained by the American Red Cross provided 38% of the blood used; hospitals that obtain blood from voluntary, unpaid donors provided 36%; commercial blood banks 11%; nonhospital community blood banks 9.5%; hospitals that furnish blood to other hospitals 4%; and directly paid donors 2%. All were effective elements of the collection and distribution machinery during 1956. The same complementary situation existed in the territories and possessions except that no blood came from the Red Cross centers, which are on the mainland.

On the basis of a sample that covered an estimated 78% of the blood usage, the committee places the number of transfusions in continental United States at 4,585,000; and an even more complete return permits an estimate of 48,200 transfusions for the territories and possessions. Detailed information regarding geographical variation in usage, and collateral facts concerning total blood collections and number of persons who received transfusions, are also included.

On the problem of projecting from the sample data to arrive at estimates for the United States the Project Advisory Committee received repeated assistance from John B. Alsever, M.D., Southwest Blood Banks, Phoenix, Ariz., and Lloyd R. Newhouser, M.D., John Elliott Blood Bank of Dade County, Miami, Fla.

On special phases of the same problem the committee used data (in some cases confidential) provided in a fine spirit of cooperation by Marta Fraenkel, M.D., City of New York Department of Hospitals, New York; J. Richard Czajkowski, Ph.D., King County Central Blood Bank, Seattle; R. F. Ambelang, Milwaukee Blood Center, Milwaukee; G. Albin Matson, Ph.D., The Minneapolis War Memorial Blood Bank, Minneapolis; T. F. McNair Scott, M.D., The Philadelphia Serum Exchange, Philadelphia; and the following members of the American Red Cross organization: Raymond F. Barnes, M.D., and Robert A. Freeman, Area Office, St. Louis; Joseph Hladecek, Area Office, San Francisco; Edward M. Schottland, Regional Center, Los Angeles; Herbert R. Brown, M.D., Regional Center, Rochester, N. Y.; Victor G. H. Wallace, M.D., Regional Center, Hartford, Conn.; and Robert E. Baker, M.D., Regional Center, Boston.

Also very helpful either during the planning stage or subsequently were Bernice M. Hemphill, Irwin Memorial Blood Bank, San Francisco; Marion R. Rymer, Ph.D., Belle Bonfils Memorial Blood Bank, Denver; F. J. Pinkerton, M.D., Blood Bank of Hawaii, Honolulu, T. H.; Merrill J. Wicks, M.D., Tacoma-Pierce County Blood Bank, Tacoma, Wash.; Mrs. Edward A. Babcock, Sacramento Medical Foundation, Sacramento, Calif.; Chester D. Swope, D.O., American Osteopathic Association, Washington, D. C.; and in the Red Cross organization: William M. Markel, M.D., Regional Center, New York; Frederick Proescher, M.D., Regional Center, San Jose, Calif.; Jerome C. Smith, Regional Center, Rochester, N. Y.; and the Blood Program staff at the national headquarters, Washington, D. C.

The committee is especially grateful to George W. Hervey, Sc.D., for devoting time and talent to assembling the data and writing the initial draft of this report.

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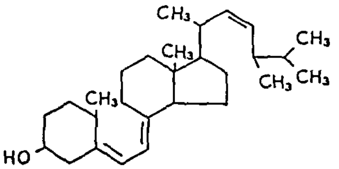
COUNCIL ON DRUGS

NEW AND NONOFFICIAL DRUGS

Monographs and supplemental statements on drugs described here and in subsequent editions of New and Nonofficial Drugs are based on the evaluation of available scientific data and reports of investigations.

H. D. Kautz, M.D., *Secretary.*

Dihydrotachysterol.—9, 10,-Secoergosta-5, 7, 22-triene-3β-ol.—Dihydrotachysterol is prepared in noncrystalline form as an oil solution, which is standardized biologically and adjusted to a potency equivalent to 1.25 mg. of the crystalline material per cubic centimeter. The structural formula of dihydrotachysterol may be represented as follows:



Actions and Uses.—Dihydrotachysterol is obtained by the reduction of tachysterol, a derivative of irradiated ergosterol. Chemically, however, it is more closely related to calciferol (vitamin D_2), differing from it structurally in that the $=CH_2$ group at C-19 is reduced to $-CH_3$, with the elimination of the double bond. This difference is responsible for the fact that dihydrotachysterol has only a small fraction of the antirachitic potency of calciferol (1/400 to 1/500), although it retains the ability to raise the calcium concentration of the blood. Because of its chemical similarity to calciferol and its strong "calcemic" activity, for which it is chiefly used in therapy, the current trend is to regard it as a form of vitamin D.

Dihydrotachysterol, when administered in appropriate doses, raises the level of total calcium and, consequently, the concentration of ionic calcium in the serum. Because of this calcemic effect, it is of value in correcting the hypocalcemia of hypoparathyroidism (idiopathic or postoperative) and pseudohypoparathyroidism, thereby controlling tetany and preventing cataract formation and other manifestations of hypocalcemia. Another important use of dihydrotachysterol, presumably also dependent upon its calcemic effect, is in the treatment of vitamin D-resistant rickets. Its effectiveness in this disease appears to equal the effectiveness of large doses of calciferol. Dihydrotachysterol may be given orally over considerable periods of time, provided that the serum calcium is not permitted to rise above normal levels.

The weight of evidence at the present time is that four substances, namely, calciferol (vitamin D_2), vitamin D_3, dihydrotachysterol, and parathyroid hormone, all have a direct effect on the mobilization of mineral from bone, and that this effect is partially responsible for the elevation of serum calcium when using each of the preparations. It seems unlikely that minor differences in the physiological effects of these preparations, such as in their effects upon serum and urine phosphate, would prove decisive in the choice of an activated sterol for the control of hypocalcemia. The same may be said concerning even the major differences in their influence upon the absorption of calcium from the intestines. Except for the fact that dihydrotachysterol appears to act more rapidly and to be more rapidly disposed of when its administration is discontinued, there seems to be little ground for a choice between calciferol and dihydrotachysterol, either on the basis of the effectiveness of the calcemic action, common to both, or of relative toxicity or other undesirable side-effects. Both of these preparations are useful, and the selection of one for use is largely a matter of individual preference. Possibly the recent suggestion that the medication be changed occasionally from one preparation to the other in the course of long-continued replacement therapy will prove of value.

Dihydrotachysterol has been reported to have beneficial effects in treating scleroderma, but this evidence is scanty and inconclusive. Successful use in the tetany of pregnancy has also been reported, but the desirability of such use has been questioned. Administration of dihydrotachysterol or any other preparation to raise the serum calcium level is contraindicated in hypocalcemia associated with renal insufficiency and hyperphosphatemia.

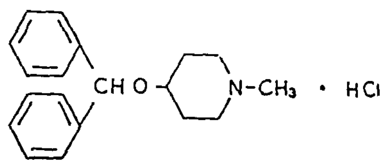
Dihydrotachysterol, like calciferol, is a highly potent preparation. The doses required to maintain the serum calcium at or near the normal level border on those doses that are definitely toxic. For this reason either preparation must be used with extreme care, especially during the initiation of therapy when the dosage for the individual is being established. After this has been accomplished, the Sulkowitch test for excessive excretion of calcium in the urine is a useful adjunct to therapy.

Dosage.—Dihydrotachysterol is administered orally either as an oil solution of which 1 cc. is equivalent to 1.25 mg. of the crystalline material, or in capsules each containing 0.5 cc. of the solution or the equivalent of 0.625 mg. of crystalline dihydrotachysterol. For the treatment of the hypocalcemia of hypoparathyroidism or of vitamin D-resistant rickets, therapy is initiated with relatively high doses. These range from 3 to 10 cc. (or 6 to 20 capsules) per day for several days. Maintenance doses average 1 to 7 cc. (or 2 to 14 capsules) per week, depending upon the blood and urine calcium levels.

Preparations: capsules 0.625 mg.; solution 1.25 mg. in 1 cc.

Applicable commercial name: Hytakerol.

Diphenylpyraline Hydrochloride. — 4-Diphenylmethoxy-1-methylpiperidine hydrochloride.—The structural formula of diphenylpyraline hydrochloride may be represented as follows:



Actions and Uses.—Diphenylpyraline hydrochloride, a potent antihistaminic compound, is related chemically and pharmacologically to diphenhydramine. Although clinical experience with the drug is limited, it appears to be satisfactory for the treatment of allergic and hypersensitivity reactions usually considered amenable to therapy with histamine-antagonizing agents. The incidence of side-effects to diphenylpyraline hydrochloride is low; drowsiness, dryness of the mouth, headache, and dizziness are encountered occasionally. See the general statement on histamine-antagonizing agents in New and Nonofficial Remedies.

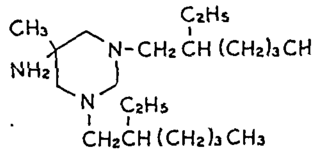
Dosage.—Diphenylpyraline hydrochloride is administered orally. The usual dose for adults is 2 mg. every four hours. Dosage for children is reduced according to age.

Preparations: tablets 2 mg.

Applicable commercial name: Diafen.

SchenLabs Pharmaceuticals, Inc., cooperated by furnishing scientific data to aid in the evaluation of diphenylpyraline hydrochloride.

Hexetidine.—5-Amino-1,3-bis(β-ethylhexyl)-5-methylhexahydropyrimidine.—The structural formula of hexetidine may be represented as follows:



Actions and Uses.—Hexetidine, a local anti-infective agent, is proposed for use in the treatment of vaginitis and cervicitis due to the fungal organism, Candida albicans, or the protozoan organism, Trichomonas vaginalis. The drug is also reported to be effective against a newly named organism, Hemophilus vaginalis, which is said to be the etiological agent responsible for most cases of so-called nonspecific bacterial vaginitis and leukorrhea. In laboratory susceptibility tests, hexetidine shows moderate to excellent antimicrobial activity against these organisms as well as against some gram-positive and gram-negative bacteria. However, the in vivo (clinical) evidence is not nearly so convincing. Although prior experience has shown that the protozoan Trichomonas vaginalis is readily destroyed by a variety of agents in the laboratory, there is frequently very little correlation between in vitro and in vivo activity. Thus, while the protozoan is susceptible to hexetidine in the test tube, this does not necessarily indicate an equal antimicrobial activity in clinical infections.

The drug has been used in a fairly large number of patients with trichomonal vaginitis, and, in some cases, considerable improvement has been noted. However, in view of the difficulty in enforcing strict controlled conditions and obtaining adequate follow-up observations in studies of this nature, it is not yet possible to determine the usefulness of hexetidine in comparison with other agents. Hence, additional controlled clinical studies are needed before the ultimate usefulness of hexetidine as a trichomonacide can be determined. Results of clinical trials with hexetidine in vaginal moniliasis have been somewhat more encouraging than in trichomonal infections. Some observers have reported high rates of cure after a course of therapy with this agent. Since the monilial infections are, in general, more amenable to therapy of any kind than are trichomonal infections, the significance of the reported high rates of cure in vaginal candidiasis is uncertain. On the basis of present evidence, hexetidine appears to be of about the same order of effectiveness as gentian violet but has the advantage of not staining clothing. Case reports suggest that hexetidine is clinically effective in some cases of nonspecific vaginitis or vaginitis believed due to H. vaginalis.

The systemic toxicity of hexetidine in experimental animals is low. Except for occasional instances of local irritation, clinical employment of the drug has not been associated with any untoward reactions or side-effects. Its sensitizing potential on the mucosa of the vagina has not been determined.

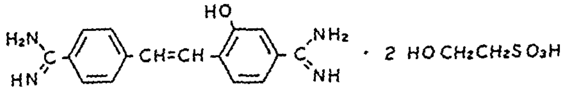
Dosage.—Hexetidine is employed intravaginally as a 0.1% gel. The suggested dosage is approximately 7 cc. of the gel instilled high in the vaginal vault on each of six nights. The treatment may be repeated if necessary, and the drug may be used throughout the menstrual period. A douche may be used prior to application. Soapy solutions should not be used for douching since the drug is inactivated by soap. Hexetidine should not be used intracervically.

Preparations: gel (vaginal) 0.1%.

Applicable commercial name: Sterisil.

Warner-Chilcott Laboratories, Division of Warner-Lambert Pharmaceutical Company, cooperated by furnishing scientific data to aid in the evaluation of hexetidine.

Hydroxystilbamidine Isethionate.—2-Hydroxy-4,4′-stilbenedicarboxamidine di(β-hydroxyethanesulfonate).—The structural formula of hydroxystilbamidine isethionate may be represented as follows:



Actions and Uses.—Hydroxystilbamidine isethionate, an aromatic diamidine base, is a derivative of stilbamidine isethionate and exerts the same type of antifungal-antiprotozoan activity as the latter agent. The chemotherapeutic spectrum of hydroxystilbamidine appears to be identical with that of its predecessor, stilbamidine. The chief difference between these agents lies in the fact that whereas stilbamidine frequently produces a late trigeminal neuropathy, this has not been observed with use of hydroxystilbamidine. This difference is considered sufficiently important to warrant replacement of stilbamidine by the equally effective, but less toxic, hydroxy derivative.

Hydroxystilbamidine isethionate appears to be the best chemotherapeutic agent available for the treatment of North American blastomycosis. Adequate therapy will frequently lead to complete eradication of severe pulmonary and systemic infections which, prior to the introduction of the diamidine compounds, were considered incurable. Hydroxystilbamidine may also be used in conjunction with iodine and roentgen therapy for the treatment of the localized or cutaneous forms of the disease. Although no data are as yet available, it is possible that the drug may also be of some usefulness in South American blastomycosis and coccidioidomycosis. It is of no value in the treatment of Torula infections or histoplasmosis.

Hydroxystilbamidine is effective for the management of certain types of leishmaniasis. Although antimony compounds are generally considered to be drugs of choice for this protozoan infection, hydroxystilbamidine may frequently produce beneficial effects in patients who fail to respond or are intolerant to antimony-containing agents. The drug apparently is equally useful for American mucocutaneous leishmaniasis and for kala-azar (visceral leishmaniasis).

There is some evidence that actinomycosis is influenced favorably by use of hydroxystilbamidine. However, since this mycotic disease is treated effectively with antibiotics in approximately 80% or more of the cases, hydroxystilbamidine should never be considered a primary therapeutic agent. A trial of therapy with hydroxystilbamidine is warranted in actinomycosis only in those patients who have failed to respond to adequate treatment with the preferred antibiotics.

To date, there are no reports on the use of hydroxystilbamidine in African trypanosomiasis. However, on the basis of its close similarity to stilbamidine, it may be predicted that the hydroxy derivative, like the parent drug, will be effective in early cases of Gambian and Rhodesian trypanosomiasis (African sleeping sickness). Since neither form of the drug gains access to the cerebrospinal fluid nor can be given intrathecally, it cannot be expected to be useful and should not be administered in the late neurological stage of the disease. The diamidines are of no value in South American trypanosomiasis (Chagas' disease).

Because of the common factor of hyperglobulinemia in kala-azar and multiple myeloma, the diamidines have been tried for the treatment of the latter disease. In some patients, such therapy affords marked, but temporary, relief from pain. There is also some evidence that it can cause favorable morphologic changes in the myeloma cells of some patients. However, the response is usually inconsistent, and, even in the most favorable cases, relapse inevitably occurs. There is no evidence that hydroxystilbamidine affects the course of the disease, prolongs the life of patients with multiple myeloma, or causes arrest of the neoplastic process. In general, the use of urethan or roentgen irradiation to localized lesions is considered preferable for the initial treatment of the disease. However, in view of the inadequacies of these and all other modes of therapy, a trial of hydroxystilbamidine may also be justified for the palliation of pain in multiple myeloma.

Aside from the absence of late trigeminal neuropathy, other toxic manifestations referable to hydroxystilbamidine appear to be somewhat less frequent than with use of stilbamidine. However, any of the immediate side-reactions which have been observed during or immediately after intravenous injection of stilbamidine may be expected to occur with the use of hydroxystilbamidine. These effects, believed to be due to the release of bound histamine, include the following: fall in blood pressure, rapid pulse, facial flushing, dizziness, salivation, sweating, headache, nausea, vomiting, dyspnea, formication, syncope, fecal and urinary incontinence, and edema of the eyelids and face. Such side-effects, if present, are usually transitory and disappear within 10 to 30 minutes. They may be minimized by slow intravenous infusion of diluted solutions.

Hydroxystilbamidine isethionate in solution is unstable when exposed directly to heat, sunlight, and ultraviolet light. Such exposure causes partial deterioration of the drug at the unsaturated stilbene linkage with release of toxic breakdown products. Deterioration may be prevented by storing the drug in a dry form away from heat and light. Freshly prepared solutions should be protected similarly. After injection, patients should avoid excessive exposure to sunlight on the premise that toxic products may be formed from the drug remaining in the skin. There is no evidence that freshly prepared solutions of hydroxystilbamidine isethionate are toxic to the kidney or liver. Nevertheless, renal and hepatic function should be evaluated prior to initiating therapy, and the drug should be administered cautiously and in reduced dosage in the presence of renal or hepatic disease.

Dosage.—Hydroxystilbamidine isethionate is administered by continuous, slow, intravenous drip and, rarely, by intramuscular injection. For intravenous use, a freshly prepared solution of the dose to be used is diluted in about 200 cc. of either 5% dextrose in water or isotonic sodium chloride solution. This is infused over a period of 45 minutes to 2 hours. Slow infusion is essential to avoid a fall in blood pressure or other side-effects. During infusion, the solution should be protected from light by covering the container with black paper or a heavy towel. At warm temperatures, it may be advisable to complete the injection in somewhat less than 2 hours to avoid dangerous deterioration of the solution.

In occasional cases in which intravenous use is not feasible, it may be necessary to administer hydroxystilbamidine isethionate by the intramuscular route. For such use, the proper amount of the dry, sterile powder is dissolved in 10 cc. of 5% dextrose in water or isotonic sodium chloride solution and is administered by deep intragluteal injection. Since pain at the site of injection follows its intramuscular use, the drug should be given intravenously whenever possible.

For treatment of susceptible fungal or protozoan infections, the suggested dosage for adults is 225 mg. at intervals of 24 hours. The duration of such therapy is determined by clinical improvement and disappearance of causative agents from the lesions. For example, a course of therapy consisting of daily injections of 225 mg. may be as short as 1 week to 10 days in cases of highly susceptible kala-azar to as long as 2 to 3 months in severe blastomycotic infections. Clinical improvement is the sole criterion for total dosage when the drug is tried as a palliative agent in multiple myeloma. For all indications, dosage for children is reduced proportionally according to body weight or body surface.

Preparations: powder (injection) 225 mg.

Applicable commercial name: Hydroxystilbamidine Isethionate.

The Wm. S. Merrell Company cooperated by furnishing scientific data to aid in the evaluation of hydroxystilbamidine isethionate.

Parenteral Use of Novobiocin Sodium

The Council has evaluated the parenteral use of the antibiotic, novobiocin (Albamycin, Cathomycin) sodium, for injection by either the intravenous or intramuscular route. On the basis of currently available evidence, the Council concluded that the parenteral administration of this agent is justified as a temporary measure for the treatment of severe infections in those patients who are unable to take the drug by mouth. The indications for parenteral therapy with novobiocin sodium are the same as those for the oral form of the drug. (See the monograph on novobiocin sodium in THE JOURNAL, Feb. 23, 1957, page 646.)

By either parenteral route, the usual dosage for adults is 500 mg. every 12 hours; for children, 15 mg. per kilogram of body weight every day in two divided doses at intervals of 12 hours. For intravenous administration, a concentrated solution is freshly prepared by dissolving 500 mg. of the powdered drug in 5 cc. of a suitable solubilizing agent. This solution is diluted with 30 cc. of isotonic sodium chloride solution, lactated potassic saline injection (Darrow's solution), or Ringer's injection and then administered by slow, direct, intravenous injection. At least 5 to 10 minutes should be allowed for direct intravenous injection, since too rapid administration may cause venous irritation or even thrombophlebitis. If parenteral fluid therapy is also indicated, the concentrated solution of novobiocin sodium may also be added to 1 to 3 liters of any of the foregoing fluids and administered by intravenous infusion. In occasional cases in which neither oral nor intravenous therapy is possible, the concentrated solution (100 mg. per cubic centimeter) of novobiocin sodium may be injected intramuscularly. This, however, usually causes some pain and irritation at the site of injection. Hence, whenever parenteral administration is necessary, the intravenous route is preferred. Oral medication should be substituted for parenteral therapy as soon as possible.

The Council voted to expand the N. N. D. monograph on novobiocin sodium to describe its use by the parenteral route.

The Upjohn Company cooperated by furnishing scientific data to aid in the evaluation of the parenteral use of novobiocin sodium.

MEDICINE AT WORK

BOOTSTRAPS FOR OUR FORGOTTEN MILLIONS

HOW BOLD ADVANCES IN AND OUT OF MEDICINE ARE ENABLING THE DISABLED TO REBUILD THEIR LIVES

Milton Golin

At nine o'clock tomorrow morning, a scowling but determined man will mutter a surly good-by to his companion and begin strolling across downtown Chicago. Commuters and shoppers, motor exhaust and police whistles, jutting newstands and steep curbs—these will make the world's toughest obstacle course in a most decisive journey.

This man is blind. He will reach the other end of the Loop all right—just as some 300 others have "soloed" during the past eight years, and just as he might expect hundreds more to do in years ahead. When he gets there the scowl will be gone. His companion counselor, having rushed to the destination by a short cut, suddenly will be transformed from a cruel taskmaster into the greatest guy in the world.

"That's the way it always turns out," says Russell Williams (sightless himself), who is in charge of rehabilitation of the blind at suburban Hines Veterans Hospital. "They hate us when they start out and they love us when it's over. In just 15 minutes we see outlook switch from tortured despair to elated self-confidence. After 18 weeks of training [20 blind veterans a day shuttle with counselors between Hines and the Loop] we consider the downtown solo a standard for adaptability. These 'graduates' get no diploma but the test is commencement—the beginning of a new life."

Williams' words go far beyond the success of a blind man in a seeing city. They illustrate the maturity of a concept—a philosophy, if you will—to which dedicated doctors, nurses, teachers, therapists, and experts in many other fields have devoted their energies in recent decades. This concept at last proves that millions of severely disabled persons, whether they are short of hearing, sight, speech, limb, or normal vigor, can be shown how to lift themselves to fruitful lives. Where is the proof?

—It is in Knoxville, Tenn., where leaders of the local medical society worked with 25 social agencies, scores of other professional and business men, labor unions and city officials to help relieve an industrial manpower shortage with the specially taught skills of 1,500 disabled neighbors. The cooperative effort not only filled job vacancies but also opened a door of independence to the disabled, saved tax dollars which had been going to their families from welfare funds, and enriched the community in cash income and morale. (Success in Knoxville inspired similar programs for the handicapped in Memphis and Kansas City, Mo.)

—It is in Woodville, Pa., where a civic-minded physician wondered how an active rehabilitation program would benefit patients in the county poorhouse. With limited funds he joined with forward-looking officials to counsel and job-train the men and women. Within four years the shoestring project had blossomed into a full-fledged institutional program as hundreds of patients were leaving to take jobs or care for themselves at home.

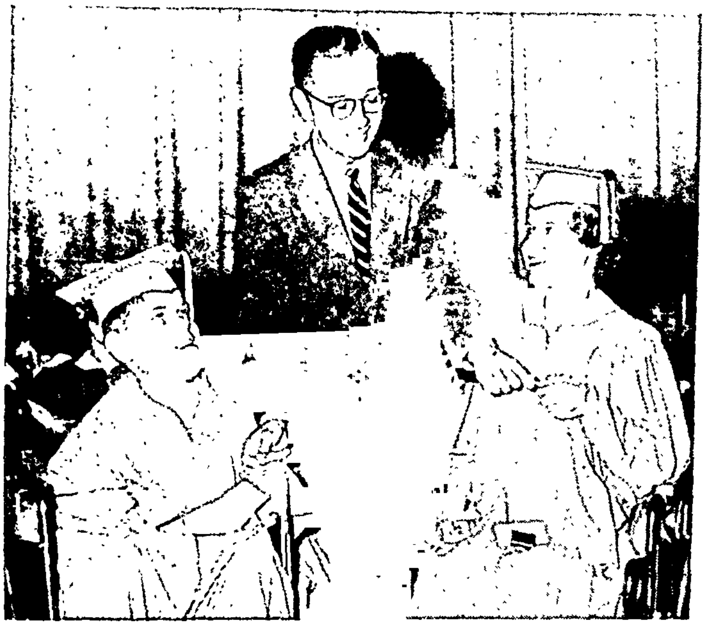


Fig. 1.—These teenagers of Mount Vernon, Ill., Marvin Malone and Rosalie Anslinger, are the first to complete four years of high school via a home-to-school telephone network. Home-bound victims of paralytic poliomyelitis, they began college courses several weeks ago by the same telephone network.

—It is in Park Forest, Ill., where 200 housewife volunteers, under medical guidance, this summer managed to awaken initial interest and response from children suffering from a variety of severe disabilities. Their free "Handy Camp" draws upon established therapy techniques in swimming, games, and participant music activities.

—It is in Sharon, Pa., where Rotarians, cooperating with a surgeon member, began underwriting the expenses of needy children treated at the local hospital. That was in 1920. Today the Mercer County Crippled Children Society, which grew out of this effort, is financing treatment for 500 youngsters a year. (All six Rotary clubs in the county not long ago put up $60,000 to kick off a $200,000 fund drive for a cooperative rehabilitation school and clinic.)

—It is in Fort Springs, W. Va., where voters recently elected a fellow townsman as their Justice of the Peace while he was still in a hospital for treatment of an injury, suffered in a coal mine accident, which resulted in paraplegia. (From his hospital bed he studied a correspondence course in accounting and business law.)

—It is in New Orleans and Dallas, where separate television programs feature interviews of handicapped job candidates by panels of businessmen. (Placements have reached a 90% rate.)

Changing Concepts

These varied efforts to help the disabled help themselves point up a relatively new phenomenon in medicine and in allied nonmedical fields. In primitive times deformed children were slaughtered to prevent an unproductive drag in a struggle for survival. Even in ancient Rome the killing or abandonment of physically impaired children was sanctioned by law. While the disabled were spared their lives in the centuries which followed, they were nevertheless ridiculed, laughed at, spat upon, and tormented. Not until 1780, when the first institute devoted entirely to the care of the crippled opened in Switzerland, did society begin to recognize its responsibility to the handicapped. Gradually custodial care evolved into education as well. Public repugnance toward the crippled turned largely to an attitude of helpless pity; so many of them faced early death.

The penicillin age (with its beneficial chain reaction in all branches of medicine) and World War II began to change all that. Turning to the handicapped to relieve its wartime manpower shortage, industry found it was getting more than it bargained for: better workers. One-time employees injured in battle, meanwhile, were surviving hurts which, a generation earlier, surely would have doomed them. Many of these veterans returned home to show that, with proper training, they too could be self-sufficient. So the employment doors began opening across the land for more and more nonveteran as well as war-veteran disabled: the victims of paralytic poliomyelitis, the paraplegics, the deaf, the blind, the epileptics, and others.

More likely than not, a doctor's hand holds the key to that door. Today, as never before, thousands of physicians in every phase of their profession, ranging from general practice and the specialties to medical education and clinical research, are recognizing that follow-through rehabilitation of all patients (not just the severely disabled) is a prime medical responsibility. This broadening realization that the medical job is not done when the cast is removed, or when chemotherapy has performed its function, is creating a "new" kind of medicine—on a par with preventive health and management of the patient. Dr. John Richard Fowler, a past-president of the American Academy of General Practice, has called rehabilitation "this not only vital but spectacular field of medicine." Dr. Howard R. Rusk, foremost and most active pioneer in the field, calls it "the third phase, which takes the patient from the bed to the job."

The American Medical Association, impressed with the wide scope of the rehabilitation concept and its influence in the profession, last year created a special committee—drawing members from five separate A. M. A. councils: Medical Physics, Industrial Health, Medical Service, Schools and Hospitals, and Mental Health. (The A. M. A. has been concerned with rehabilitation since 1925, when it established a council to help place physical medicine on a sound scientific basis.)

Interlocking Roles

But while the rebuilding of a damaged life naturally casts a doctor in the role of architect, restoration cannot be possible without the skills of allied group members and the dedicated efforts of lay individuals and organizations. For in rehabilitation—as in no other endeavor of modern society—economics, sociology, the arts and crafts, and government inevitably play interlocking roles with medicine.

How many tax dollars go into public assistance funds for maintenance and medical care for the disabled? How do you put a price tag on the independence and happiness of a working paraplegic who is back with his family? How many disabled men and women are doing jobs they have never done before—often better jobs learned in vocational workshops under medical supervision? The answers are being spelled out every day in every region of our country.

In New York City, for example, is Dr. Glenn Reynolds, 32, whose legs were paralyzed by poliomyelitis five years ago. Now he is one of five "wheel chair doctors" learning adaptive techniques of his profession at the Institute of Physical Medicine and Rehabilitation. Says Dr. Reynolds: "My handicap is really a help in my work. Why, when patients see me they decide they're not so badly off after all." (The U. S. Office of Vocational Rehabilitation reports that 64 physicians were among 71,570 severely disabled persons rehabilitated into self-sufficiency last year. One doctor is a paraplegic who owns the only hospital in his town, and is its chief surgeon and administrator.)

In Washington, D. C., Miss Mary Switzer, director of the O. V. R., estimates that in the next three years, rehabilitees of 1956 will pay back in federal taxes the amount of money which the U. S. had spent for their restoration—$32 million dollars. (States had contributed another $19 million dollars.)

In Cadott, Wis., Attorney Frank E. Huettner, who lost the use of his legs in an automobile accident during childhood, is handling 50 legal cases a year. He is the first person to complete college and law school courses by means of a telephone hookup between classrooms and his home. (Telephone companies in 47 states, Alaska, and Hawaii now are cooperating with school authorities in making the same system available in their communities at a cost averaging $15 a month. One bedridden victim of poliomyelitis in Fond du Lac, Wis., recently used the hookup to enact a speaking role "on stage" in a school play.)

And in Lubbock, Texas, Jesse Bumpass, who lost virtually all of his sight and hearing from starvation in a wartime Japanese prison camp, began highly skilled work at an Air Force base—feeding data into intricate electronic computers. One of his superiors said: "At first we thought Bumpass would have to be helped because of his handicaps. Actually the reverse has happened. Others of the staff come to him for assistance."

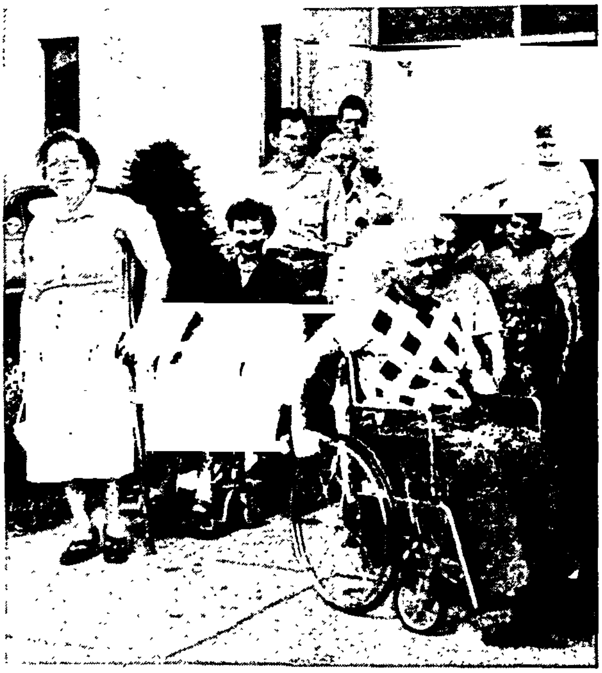


Fig. 2.—Workers on crutches and wheel chairs outside Abilities, Inc., the New York factory which employs only the disabled, 9 out of 10 of whom had never worked anywhere else before because of their handicaps. The company has "graduated" more than 300 employes to other firms in the past five years.

Other amazing stories of skill by the so-called handicapped repeatedly turn up in medical case reports and industrial records. Harold V. Connelly, born with a partially paralyzed left arm 4.5 in. shorter than the right, took up weight lifting; last year he became the first American since 1924 to win an Olympic Gold Medal in hammer throwing (he is world champion in two weight-throwing categories. An international champion pistol shooter from Hungary, Karoly Takacs, thought his career was over when he lost his right hand in an accident; but within eight months he had overcome complex physiological hurdles to win the world championship—shooting with his left hand.

Value to Industry

Many a well-trained blind man in a photographic dark room can do 30% more work than sighted co-workers because of his highly developed senses of touch and hearing. Arm and hand muscles strong enough to walk with are enabling paraplegics at bench jobs to outperform some ordinary workmen alongside. Industry after industry is accepting the handicapped as employees, but the motive is not pity or charity; it is productivity.

In the past decade production records of thousands of physically handicapped indicate beyond any question that they are equal to—and in some instances better than—their able-bodied co-workers in such important factors as attendance, safety, turnover and output. The *Firestone Rubber Company* has 150 deaf employees alone among its disabled workers. An aircraft firm in Dallas has, among its 300 disabled employees, *poliomyelitis victims* as technical writers, amputees as machine operators, and cardiac patients as tool designers. *Westinghouse, Radio Corporation of America,* and *General* Electric assign delicate wiring operations for television and radio circuits to handicapped workers. In one recent year, Lockheed saved $65,000 in salvage by employing a workshop for the blind to recover tiny nuts, screws, and washers from sweepings below its B-47 production line. A Ford personnel officer remarked: "If a job can be done with one arm, why shouldn't an employer hire a man with one arm to do it?"

Industry has an ample pool of disabled from which to draw manpower. There are some 2,230,000 seriously handicapped men and women of employable age who are wasting away their skills, their outlooks, and their countrymen's insurance and tax dollars—when they can be rehabilitated into paying jobs. The total is being increased annually by about 250,000. Every day of every year the American public is paying $1,500,000 in taxes to provide maintenance and medical care for our disabled. Yet, one government study shows that earnings of the disabled persons rehabilitated last year rose by 580%—from 19 to 129 million dollars.

Of course, a man does not suddenly become skilled by virtue of his handicap. It takes expert counseling and training under medical guidance to develop capabilities out of disabilities, to minimize the handicap while maximizing every remaining aptitude. This has led to complex procedures in the 123 Veterans Administration hospitals having rehabilitation programs. In some cases, patients are placed on the VA payroll for as long as a year in a "member-employee" program designed to orient them to outside work conditions. Another VA program, called "planning for discharge," enlists the aid of B'nai B'rith, Gold Star Mothers, and other service organizations.

Job training for the handicapped also takes place at special centers, in some general hospitals, and even on the work site. In the past 12 years the Bulova Watch Company has turned out 545 disabled graduates in its school of watchmaking. Figures released last month reveal that out of 192 graduates who were most severely handicapped (practically all paraplegics), 91% still are using skills learned in the school, and averaging an annual income of $4,400.

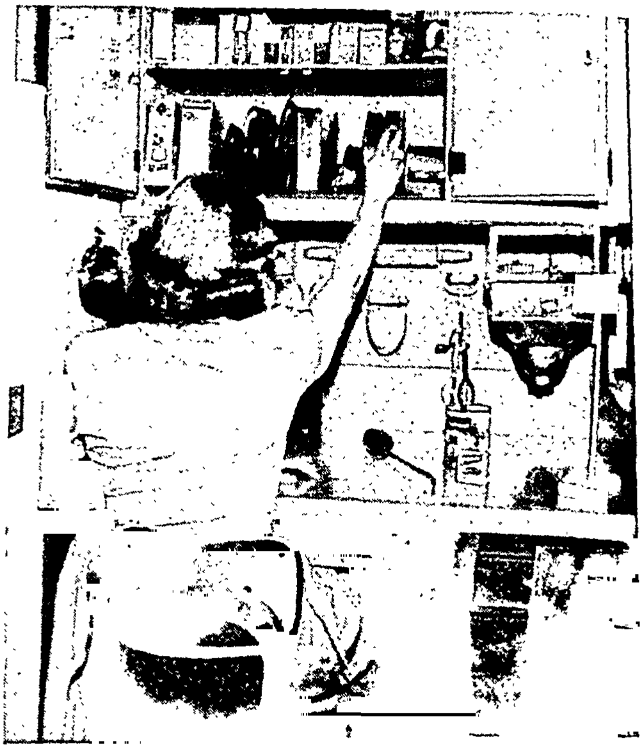


Fig. 3.—Everything needed at a mixing center in a cardiac kitchen designed by the Chicago Heart Association is in sitting reach of cardiac patients. The gravity dispenser at right holds flour and sugar.

Able-bodied Need Not Apply

Some companies flatly refuse to hire able-bodied employees, posting the help wanted sign for disabled only. One is the Paraplegics Manufacturing Company in Franklin Park, Ill. Another is Unlimited Skills, Inc., founded last year in Montreal, Canada, with the counsel of an advisory group of businessmen. Similar advice laid the groundwork for Abilities, Inc., when it was formed in 1952 by Henry Viscardi, who has turned his handicap (he was born legless) into an inspiration for thousands of disabled ersons. Nine out of 10 of his employees had never vorked anywhere else because of their disability. Vhen Viscardi first told his company organization lans to several businessmen on Long Island, they pplauded and got ready to donate to a good cause. ut he did not want money on those terms. Viscardi old them: "We'll gladly borrow your money, if ou'll take our notes. This whole idea is sound only f the company can pay its own way and make noney."

Today, Abilities, Inc., is a whopping success, aving tripled its capacity last June on a new site in lbertson, N. Y., and now employing some 350 vorkers in electronics assembly subcontracting. As he A. M. A. House of Delegates honored Viscardi ast summer with its Distinguished Service Citation, e told the source of his own inspiration: his family hysician, Dr. Robert R. Yanover. Said Viscardi: He stood me up straight and tall on these artificial imbs which I now wear. When I asked him how I ould repay him for this great service, he told me hat if I could make the difference for but one other ife, the difference between a life dependent on the harity of the community or of the family, or a life weet and rich with the dignity of self-sufficiency, hen he would be repaid."

That, Viscardi has done more than hundredfold. Iis nonprofit firm (all excess earnings are siphoned nto research and expansion) so far has "graduated" nore than 300 employees to other companies in rder to create vacancies for a long waiting list of andicapped job applicants. Among the research rojects under way at Abilities, Inc., are a two-year tudy to determine the effect of mechanization on he disabled worker, and a three-year study to examine the emotional, medical, and sociological aspects of former and present employees—to show ow they have changed under competitive working onditions. The findings could set the stage for establishment of companies employing only the handicapped in other communities.

Viscardi feels that doctors themselves may be underestimating the potentialities of their patients. To llustrate his point, he sent questionnaires several ears ago to 311 physicians, members of an industrial medical society. The quiz sheet listed a variety f disabilities, with questions inquiring who should r should not be authorized for employment. With eference to more than half of the disabilities, most f the answering physicians replied that they would ot approve hiring of such applicants. Yet every disability matched the handicap of a successful employee at Abilities, Inc.

The sort of thinking reflected in those questionnaire replies, in Viscardi's opinion, may be influenced partly by the sad state of workmen's compensation programs in our country today. He says: "No longer is workmen's compensation a stopgap aid during unemployment resulting from industrial disability. Rather it has become a way of life. We have lost sight of the real goal—the return of the worker to active employment. If he remains idle too long, the productive spark burns out. Too late he may recognize that subsidy is no substitute for opportunity." One prominent physician has described the typical workmen's compensation law as insuring to an injured employee "a sum of money which he spends and a disability which he keeps."

The picture is not all black, however. One shining exception is the Ontario Workmen's Compensation Board, whose policies and administration have provided a world standard for more than 40 years. Although the board operates a 500-bed hospital and rehabilitation center for the care of long-term or problem patients, most restoration services are provided through local facilities. Physicians may be selected freely by claimants, and are paid directly on a fee for service basis according to a schedule agreed upon with the Ontario Medical Association. The board's policy and practice is that "rehabilitation must be a community effort, involving doctors, employers, labor groups and social agencies. However, the doctor is the principal figure, as on him hinges the treatment and estimation of physical capabilities."

Fig. 4.—A blind and deaf employee of Abilities, Inc., receives work instructions from Anthony Viscardi, head of the Albertson, N. Y., electronics subcontracting firm which hires only the physically handicapped. He is "writing" directions in the palm of her hand.

Community Is Keystone

Indeed, the importance of community effort transcends all industry and workmen's compensation programs. It is the very keystone of medical rehabilitation, for without the vitality of community groups, without the neighbor-to-neighbor concept, we step backward toward pity, instead of enabling efforts, for the disabled.

In Kansas City, Mo., for example, a rehabilitation institute is functioning smoothly because of cooperative sponsorship by the Jackson County Medical Society and nine civic, charitable, and voluntary health organizations. The presidents of each organization are ex officio board members with full voting privileges.

Under Iowa's Cardiac-in-Agriculture program, representatives of the county extension service, working with the local medical society, the University of Iowa Medical College, and the Heart Association, visit the farmer with suspected heart disease to determine how he might continue farming with reorganization of work to meet his capabilities. If he must quit farming, then the state Vocational Rehabilitation Service offers to help toward possible retraining for another job.

Cooperative community action in Indiana is considered so vital that the state board of health, in surveying rehabilitation needs for the Indianapolis area, recently enlisted the help of local medical society leaders, health and welfare council officials, claims men and lawyers for compensation insurance companies, representatives of organized labor, spokesmen for personnel management and industry, and three local clergymen.

Similar consideration for the disabled outside of industry also is at last reaching a class of handicapped too easily overlooked—the American housewife. Out of an estimated 26 million seriously disabled persons in the United States, between 5 and 10 million are housewives, of whom about 1 million are on crutches or in wheel chairs. Many of them are just beginning to benefit from the research which until now has been concentrated on the crippled in industry. Organizations such as the Chicago Heart Association (designing an easier-to-manage "cardiac kitchen"), the New York Heart Association, the National Foundation for Infantile Paralysis, the Disabled Homemakers' Research Fund, and the Institute for Physical Medicine and Rehabilitation at the New York University–Bellevue Medical Center are hard at work in this hitherto forgotten field. They are fitting household tasks to bypass specific disabilities, rearranging the household itself and adapting home equipment to more efficient use.

The effect of these cooperative efforts will be felt for many years to come. Dr. Samuel S. Herman of the Office of Vocational Rehabilitation told the University of Connecticut School of Economics last June: "Far too little has been given to the rehabilitation needs of women. The disability of a wife and mother can destroy a home, cast children adrift, exhaust the husband's earnings, and produce public costs which are so large and so prolonged as to be almost immeasurable."

To help the handicapped housewife, as well as disabled persons everywhere, amateur and professional inventors have devised hundreds of ingenious devices: bladed forks, automatic page turners, telephone holders, foot pedals for machine operations, one-handed lipstick, foot-controlled nail clippers, special tongs for blowing the nose, one-handed egg breakers. A friction wheel developed by and for handicapped workers at Abilities, Inc., twists cables so much faster than conventional methods that it has now been adopted by other factories to speed production by their able-bodied workers. Several weeks ago in Los Angeles, physicians saw a servometer-activated, pneumatically powered artificial arm (there are only four models in this country) perform functions which could not be done with limbs operated only mechanically.

Artificial limbs have been in use since ancient times, but in the last decade their design and manufacture with lightweight components have revolutionized the lives of many men and women who otherwise might have preferred no prosthetic aid to bulky and heavy devices. Even more recently, manufacturers drawing upon medical advice have opened new worlds for handicapped children by scaling down artificial limbs on a broad production basis.

Centers and Family Doctors

New worlds open every day for children at the Crotched Mountain Rehabilitation Center in southern New Hampshire. The only place of its kind for handicapped youngsters, this facility promises to become the foremost rehabilitation center of the world when plans are realized for a 5-million-dollar adult unit, an academy for training and research, and a "village" designed in every detail for the handicapped. In this country there are only about a dozen such privately operated comprehensive rehabilitation centers—where specialists in many fields of medicine coordinate the recreational, vocational, placement, social, psychological, and other services necessary for complete rehabilitation of the severely disabled. Other centers include the Institute of Physical Medicine and Rehabilitation in New York City (initially financed with a $1,500,000 gift by Bernard Baruch); the Rehabilitation Institute of Chicago (established with $400,000 which Dr. Paul B. Magnuson's committee raised from business and industry, private welfare agencies, foundations, and individuals); the Woodrow Wilson Rehabilitation Center in Fishersville, Va.; the Institute for Crippled and Disabled in New York City; the "May T. Morrison" in San Francisco; and the Kessler Institute of Rehabilitation in West Orange, N. J.

While these centers perform a vital function in making the lives of severely handicapped individuals whole again, they cannot possibly meet the vast rehabilitation needs of thousands of communities all across the nation. Herein lies the challenge to every American physician, particularly to family doctors, who are closer to problems of the disabled than any other group in the United States. This challenge is being delineated and accepted at every level of organized medicine, starting with the intracouncil A. M. A. Committee on Rehabilitation, headed by Dr. Frank Krusen:

—Five medical societies in the District of Columbia, Maryland, and Virginia are pooling their facilities and efforts with 140 separate volunteer health and other agencies to develop a central service and "directory of resources for the handicapped."

—A similar "area service" for member physicians has been operating under joint medical society auspices in Montgomery, Delaware, and Philadelphia counties, Pennsylvania.

—In Minnesota, which has three comprehensive rehabilitation centers, six satellite centers have been established in strategically placed outlying areas selected to coincide with both population needs and available hospital facilities. (Administration of several of these satellite centers is rotated regularly among members of the respective medical society's rehabilitation committee.)

—Authorities in various phases of medical rehabilitation will be asked to prepare papers for publication in The Journal, under auspices of the A. M. A. Committee on Rehabilitation.

—The same A. M. A. committee is encouraging all state medical associations to set up active rehabilitation committees. (Committees on rehabilitation already are active in 112 county medical societies.)

—Three-fourths of the 85 medical schools in this country now have coordinated teaching programs to bring to undergraduate medical students the basic principles of rehabilitation—thus orienting thousands of budding general practitioners as well as students who later will become specialists in this and other fields.

—Increasing numbers of medical schools are scheduling postgraduate and refresher courses for general practitioners to increase their knowledge of modern rehabilitation methods. Typical is the University of Buffalo medical school, which has joined with a dozen hospitals in the surrounding region to offer a 20-week postgraduate course and monthly clinical conferences on the subject.

Solutions Ahead

Dr. Howard Rusk, emphasizing the essential part played by family doctors, has stated: "Rehabilitation of most disabled persons is within the scope of the practicing physician, provided the hospital has adequate ancillary personnel to furnish the desired training. . . . For the average hemiplegic, adequate training can be given in a general hospital, a doctor's office, or even at home. He does not need a rehabilitation center. . . . The doctor must write the prescriptions for social and vocational needs and see that they are properly filled just as he would for drugs or diet."

Probably the greatest single development affecting rehabilitation in recent years, says Dr. Rusk, is the Salk poliomyelitis vaccine which, since its introduction in 1954, has prevented an estimated 10,000 cases of paralytic poliomyelitis in the U. S. He believes that future success of the vaccine and of allowing others like it may reduce disabilities to the point of more efficient total rehabilitation of other handicapped persons.

The future holds other promises, too: More intense efforts to rehabilitate disabled housewives; even greater acceptance of the handicapped in industry to meet growing manpower demands; research and action to bring self-sufficiency (possibly through bedside work) to the millions of homebound disabled who now are labeled unemployable.

Meanwhile, it is the present, not the future, which is uppermost in the minds of all unemployed disabled persons as they read and hear about miracles in modern medicine—and wonder whether the same society which can save a life can also give meaning to it. Having survived, they now desperately need to be revived. For them, rehabilitation is much more than a cure, much more than a way to a job. It is delicious freedom from a prison of dependence. Their hopes and prayers might very well lie in the credo of Abilities, Inc.:

> I do not choose to be a common man. It is my right to be uncommon—if I can. I seek opportunity—not security. I do not wish to be a kept citizen, humbled and dulled by having the state look after me. I want to take the calculated risk; to dream and to build; to fail and to succeed. I refuse to barter incentive for a dole. I prefer the challenges of life to the guaranteed existence; the thrill of fulfillment to the stale calm of Utopia. I will not trade a freedom for a beneficence nor my dignity for a handout. I will never cower before any master nor bend to any threat. It is my heritage to stand erect, proud, and unafraid; to think and act for myself, enjoy the benefit of my creations, and to face the world boldly and say, "This I have done." For our disabled millions, for you and me, all this is what it means to be an American.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
Edited Under the Direction of the Board of Trustees

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Subscription price . Fifteen dollars per annum in advance
Cable Address . . . . "Medic, Chicago"

ACNE, ASTHMA, AND ATTITUDE

IN THIS issue of THE JOURNAL, page 1110, there is a plea for the physician to explain to the patient the nature of his illness, the rationale of its management, and the general prognosis. The article discusses the need for such an explanation, but does not dwell on the mode of presentation. While explaining the mechanism and significance of symptoms is important for patients with all forms of sickness, such expressions of sympathetic interest become even more meaningful where the disease has a prominent emotional veneer.

Physicians are well aware of psychosomatic influence as a partial, or on rare occasion even total, cause of organic disease. The consideration of the emotional factor in illness is now almost "second nature," especially in the diagnosis of allergic or dermatological manifestations. Yet, the lack of some specific emotional pattern in any form of these particular diseases, or the failure of some even vaguely similar emotional pattern to consistently show itself with any one disease, tends to keep alive the belief that organic illness usually has organic etiology.

The attitude of a patient when he first seeks treatment is frequently quite obvious. But what of the attitude of the doctor? Unfortunately, too many patients pay less attention to what their personal physician says than they do to the manner in which the advice is delivered. Any attempt by the physician to minimize signs or symptoms that are to the sick person grossly overt evidence of imperfect health can nullify the most honest diagnosis as well as the most obvious potential benefit.

Contrary to popular belief, there are persons who accept, without hesitation, a diagnosis implying they are victim to a disease of mental pathogenesis. It is, therefore, important to remember never to excuse illness solely as an expression of mental conflict, just as it is equally important not to increase the hopelessness of a patient by dismissing his disturbing symptoms altogether. Patients must not be deprived of all available diagnostic techniques at the expense of their psyche. Psychiatric referral must have a firm basis; it must not be an excuse.

In the great majority of allergic conditions, some intolerance to food, pollen, or other environmental factor is usually found. Most diseases of the skin can be demonstrated to have a microbiological, toxicological, or systemic cause. In addition, it is not unusual to have both types of disease result from heredity. The psychiatrist himself makes the strongest plea that his medical colleagues eliminate every organic possibility before considering the psychosomatic tangent.

With any disease, the doctor must not just make a diagnosis but—of greater significance—must be able to stabilize, rather than accentuate, the personality adjustment to the disease, diagnosed or not. The attitude of the family physician becomes of increased consequence, therefore, according to the attitude of the sick person. This same attitude of empathy must not end once the tentative diagnosis is made. Confidence of cure must be demonstrated by the attending physician if it is to be expected that the patient will have equal confidence that his physician will cure him.

Acne and asthma are just two examples of the many illnesses in which the doctor's attitude sometimes carries more weight than the doctor's apothecary. Attitude alone can be the needed catalyst to accelerate the reaction leading to a successful treatment.

DANGER AND OPPORTUNITY

In making their thought pictures, the Chinese combine the character for danger and the character for opportunity to form the word picture that describes the word "crisis." Nothing would more aptly describe the situation now facing us in regard to Asian influenza vaccine.

The thought of government intervention in the practice of medicine is abhorrent to physicians generally. There was early agreement that the United States Public Health Service should not be called upon to control and allocate the Asian influenza vaccine and that it should follow the regularly established trade channels. In July, the A. M. A. Special Committee on Influenza urged state and local medical societies to take the necessary steps in co bating the threat of an Asian influenza epidem

The Committee recommended the appointment of state and local advisory committees to establish within communities priorities, so that individuals whose services are necessary to maintain essential basic community services might receive the vaccine first. On August 28, the State and Territorial Health Officers concurred in these recommendations and submitted them to the surgeon general of the Public Health Service, who approved them. The Special Committee on Influenza suggested to state and local medical societies that they offer the leadership in this complex community problem. A number of medical societies have taken definitive action. There have been many unforeseen problems in the placement of orders, delivery, and distribution of vaccine. The vaccine will be given in the majority of cases by physicians who must use their judgment in carrying out previously agreed upon priority systems.

Certainly, it would do serious harm to every physician in the country if the voluntary nongovernmental priority vaccine program breaks down. In spite of certain past inequities, misunderstandings, and some deviations from agreed priorities, it is more desirable than ever that physicians subscribe to and use all their professional prestige to insure that the medical priority system be followed.

The vaccine priority program is real; there is not enough vaccine to go around and there will not be for some time. Physicians cannot ignore this fact, and they should not permit a program of indiscriminate vaccination without concern for essential priorities. Fortunately, instances in which this has occurred are not representative of the actions of physicians as a whole. Most physicians have demonstrated a mature sense of social responsibility.

In the final analysis, the assurance that priority plans will be followed depends on the full and complete cooperation in the chain of distribution from the manufacturer, to the wholesale druggists and retail pharmacists, through the physician, and, finally, to the patient. Of equal importance, organizations and individuals should await their turn for vaccine in order of priority. Cooperative community thinking and serious consideration are required, because it is a community responsibility.

NATIONAL LIBRARY OF MEDICINE

The National Library of Medicine, established by Public Law 941, 84th Congress, has just completed its first year of operation under its new sponsor, the Public Health Service, and the first annual report of the library has just been issued. The record is an amazing one. It would appear that the renaissance of this great institution, begun through the initiative of the Army Medical Service, is now coming to full flowering.

The library has vigorously pushed its comprehensive acquisitions policy, and is receiving important medical literature from the four corners of the earth. Under its new loan policy this material is freely available to physicians throughout the United States, on request made through local libraries. The publications program of the library, which includes catalogs, indexes, and bibliographies of all kinds, is most impressive, and is a clear indication that the library is utilizing its full resources in offering a truly national service. Everyone who must wrestle with the vast and complicated outpouring of medical literature—and this includes, at one time or another, almost all physicians—can feel only pleasure and pride in the library's achievement.

There is one somber fact to be noted: after 40 years of striving the library has not yet obtained the new building which it so desperately needs. If any doubt existed as to the reality of this need, it will be dissipated by perusal of the current issue of the National Library of Medicine *NEWS*, which carries a description of how, during September, over 400 books of the early 19th century were damaged when water backed up and overflowed from faulty drain pipes in the library's present antiquated structure, built in 1887. Among the total losses were several volumes of Sir Astley Cooper's works, Abraham Colles' treatise on surgical anatomy (1811), and a hand-painted illustrated edition of Cooke's pocket anatomy. The library describes the loss as tragic; it seems to us that this is the word for the whole situation of delay in construction of a new building. It is a mystery why funds have not been obtained for a measure which is of immediate concern to every worker in the medical sciences, and indeed to the health of the nation and the whole future of the medical research and practice.

POLIOMYELITIS VACCINATION REMINDER CARDS

By the time this editorial appears, every practicing physician in the United States will have received two cards concerning poliomyelitis in the mail. Both are reminders to the doctor's patients—one encouraging them to start or complete their poliomyelitis vaccination series if they have not already done so, the other urging them to get their third inoculation. By filling out an enclosed form, each doctor can order free from the A. M. A. as many of these cards as he needs to send to his patients.

The two cards, together with a letter from A. M. A. President David B. Allman, mark the poliomyelitis inoculation campaign's "operation cleanup." They are designed to round up all the stragglers not yet motivated by previous efforts.

There are still plenty of stragglers. Even though approximately 72 million Americans have already received one or more doses of vaccine, 44 million need second or third injections. Approximately 37 million more have not had any poliomyelitis inoculations at all.

Vaccine supplies are now ample to meet all foreseeable needs. The United States Public Health Service forecasts that about 13 million cubic centimeters will be released monthly during November and December. About 29 million cubic centimeters were released during September and October. Compared with the 28 million cubic centimeters released in June, July, and August and the 8 million cubic centimeters released monthly during the first eight months of the year, more vaccine is available now than has been since early this year.

Since most vaccinations, now, will take place in the doctor's office, the A. M. A. Committee on Poliomyelitis—headed by Julian P. Price—feels that the final push should come from the doctor, himself, directly to his own patients.

The success of local and state medical society drives earlier this year amply demonstrated the important part physicians play in getting people to become immunized. Every physician has patients who, by themselves, will not take the initiative to get their poliomyelitis vaccinations. Many, however, might take the necessary steps if they were encouraged by their doctor, whom they respect as an authority on health. These reminder cards are designed to help reach those patients who need a word of advice from the man most concerned with their health—their own doctor.

When the American Medical Association launched its poliomyelitis inoculation campaign in January, it set as its goal vaccination of all persons under the age of 40 years. Until that goal is accomplished and poliomyelitis vaccination has taken its place with immunization against whooping cough and diphtheria as part of the routine program for infants and children, the poliomyelitis drive is not over.

FOR A NATIONAL BLOOD PROGRAM

While progress in blood transfusion services is being made locally, there is urgent need for the development of favorable and satisfactory assistance for the exchange of blood or blood credits on the national level. In terminology—to cite just one handicap in current exchange operations — some communities define a blood "unit" as 500 cc. while in others it is 450 cc., or another quantity. There are variances, too, in collection methods and standards, safe storage periods are not universally established or accepted, and there is no mechanism for accrediting blood banks.

These and other problems are natural outgrowths of a situation requiring great patience and understanding, for the separate efforts in blood transfusion service do spring from pure and humanitarian motives. Yet the situation shows a lack of unity calling for the establishment of—in the words of the Joint Blood Council, Inc.—"a national blood program in order to assure an adequate supply of blood and blood derivatives to the civilian and military population at all times." President Eisenhower describes the Joint Blood Council's mission as one "of significant importance to all Americans."

Early this year the nonprofit Council launched a postal card survey of over 9,000 hospitals and other institutions in order to arrive at the first reliable estimate in six years of how much blood is being transfused in the nation, and where the blood came from. (A special article embodying a detailed report of this survey is on page 1135 of this issue.) Now the Council is in phase 2 of its preliminary study—it is asking officials of some 5,200 hospitals, blood banks, and other blood transfusion facilities to supply more details about their services. Data from these questionnaires will benefit both individual organizations and the nation as a whole.

The Joint Blood Council must first study all aspects of the problem. Only then can it work toward an agreed plan of research, an authoritative information program, accreditation procedures, a nationwide blood exchange system, advisory status for itself in dealing with other agencies, and a campaign to enlist blood donors.

That there is essential need for a smoothly operating blood program cannot be doubted. The need exists for both the physician and his patient who some day will require blood in a hurry; in the hospital which may have to get it from a transfusion service outside its own walls; and in a government which will have to know all details about machinery for mass supply of blood during any civil or military disaster.

Although the Joint Blood Council is being helped in its study by a $50,000 federal grant, the effort is strictly nongovernmental in direction. Cooperative action is being taken by the Council members representing five national associations principally concerned with procuring, processing, preserving, and distributing blood and blood derivatives. These are the American Association of Blood Banks, the American Hospital Association, the American Medical Association, the American National Red Cross, and the American Society of Clinical Pathologists. They seek "a well known and respected transfusion service to the people of the United States through the medical profession."

Because the cooperative effort will arrive at policies by mutual agreement, rather than by arbitrary decree, the health professions and the public can look forward to a system of proper operational guidelines. Thus there is no prospect of the autocracy,mentioned by Shakespeare in his "Merchant of Venice": "The brain may devise laws for the blood, but a hot temper leaps o'er a cold decree."

ORGANIZATION SECTION

ANNUAL A. M. A. MEETING IN SAN FRANCISCO, JUNE 23-27, 1958

Plans are now under way for the Scientific Program at the Annual Meeting of the American Medical Association, San Francisco, June 23-27, 1958. There will be a full week of lectures, motion pictures, color television, and scientific exhibits.

The lecture program for each section of the Scientific Assembly is prepared by the secretary of the section. A prospective participant should communicate at an early date with the secretary of the section before which he wishes to read a paper. The deadline for submission of titles of papers is Dec. 15.

The Scientific Exhibit is arranged by the Council on Scientific Assembly in cooperation with the representatives to the Scientific Exhibit from the sections. Application blanks for space may be obtained from the section representatives or from the Secretary of the Council on Scientific Assembly. The deadline for the submission of applications is Jan. 1, 1958, but applicants are urged to send in applications as early as possible before that time.

The motion picture program is prepared by the Director of Medical Television and Motion Pictures of the Council on Scientific Assembly. All films are subject to preview before they are accepted. Inquiries concerning the submission of films should be addressed to the Director of Medical Television and Motion Pictures in care of the Secretary of the Council on Scientific Assembly. The deadline is Jan. 1, 1958.

Color television will originate at one of the San Francisco hospitals and will be shown in a hall in the vicinity of the Civic Auditorium. The local committee on color television will have charge of the program, which will be arranged in cooperation with the Director of Medical Television and Motion Pictures of the Council on Scientific Assembly.

Additional information may be obtained from the Secretary of the Council on Scientific Assembly, American Medical Association, 535 N. Dearborn St., Chicago 10.

The addresses of the section secretaries and representatives to the Scientific Exhibit from the sections are as follows:

Anesthesiology

Secretary—Daniel C. Moore, M.D., 1118 Ninth Ave., Seattle 1.

Exhibit Representatives—Edwin L. Rushia, M.D., University Hospital, Augusta, Ga.

Dermatology

Secretary—Clarence S. Livingood, M.D., Henry Ford Hospital, Detroit 2.

Exhibit Representative—Stanley E. Huff, M.D., 636 Church St., Evanston, Ill.

Diseases of the Chest

Secretary—Burgess L. Gordon, M.D., The Lovelace Foundation, 488 Gibson Blvd. S. E., Albuquerque, N. Mex.

Exhibit Representative—Edwin R. Levine, M.D., 109 N. Wabash Ave., Chicago 2.

Experimental Medicine and Therapeutics

Secretary—Elliot V. Newman, M.D., Vanderbilt University Hospital, Nashville 5, Tenn.

Exhibit Representative—Joseph F. Ross, M.D., University of California Medical Center, Los Angeles 24.

Gastroenterology and Proctology

Secretary—William H. Dearing, M.D., 200 First St. S. W., Rochester, Minn.

Exhibit Representatives—George G. McHardy, M.D., 3636 St. Charles Ave., New Orleans 15, and Willard H. Bernhoft, M.D., 2900 Main St., Buffalo 14.

General Practice

Secretary—E. I. Baumgartner, M.D., 25 Alder St., Oakland, Md.

Exhibit Representative—I. Phillips Frohman, M.D., 2924 Nichols Ave. S. W., Washington 20, D. C.

Internal Medicine

Secretary—Rudolph H. Kampmeier, M.D., Vanderbilt University School of Medicine, Nashville 5, Tenn.

Exhibit Representative—Henry T. Ricketts, M.D., 950 E. 59th St., Chicago 37.

Laryngology, Otology and Rhinology

Secretary—Hugh A. Kuhn, M.D., 112 Rimbach St., Hammond, Ind.

Exhibit Representative—Walter E. Heck, M.D., Stanford University Hospitals, San Francisco 15.

Military Medicine

Secretary—Col. Charles H. Bramlitt, M. C., U. S. A. F., Directorate of Professional Services, Office of the Surgeon General, Washington 25, D. C.

Exhibit Representative—Col. Douglas B. Kendrick, M. C., U. S. Army, Room 2603, Main Navy Bldg., Washington 25, D. C.

Nervous and Mental Diseases

Secretary—Adolph L. Sahs, M.D., University Hospitals, Iowa City.

Exhibit Representative—Benjamin Boshes, M.D., Northwestern University Medical School, 303 E. Chicago Ave., Chicago 11.

Obstetrics and Gynecology

Secretary—Keith P. Russell, M.D., 511 S. Bonnie Brae St., Los Angeles 57.

Exhibit Representative—Frederick H. Falls, M.D., P. O. Box 47, River Forest, Ill.

Ophthalmology

Secretary—Harold G. Schie, M.D., 313 S. 17th St., Philadelphia 3.

Exhibit Representative—Frank W. Newell, M.D., 950 E. 59th St., Chicago 37.

Orthopedic Surgery

Secretary—H. Herman Young, M.D., 200 First St., S. W., Rochester, Minn.

Exhibit Representative—James I. Kendrick, M.D., 2020 E. 93rd St., Cleveland 6.

Pathology and Physiology

Secretary—Hugh A. Edmondson, M.D., 1200 N. State St., Los Angeles 33.

Exhibit Representative—Samuel A. Levinson, M.D., L. A. Weiss Memorial Hospital, 4646 N. Marine Drive, Chicago 40.

Pediatrics

Secretary—Wyman C. C. Cole Sr., M.D., 3001 W. Grand Blvd., Detroit 2.

Exhibit Representative—F. Thomas Mitchell, M.D., LeBonheur Children's Hospital, Memphis 5, Tenn.

Physical Medicine

Secretary—Earl C. Elkins, M.D., 200 First St. S. W., Rochester, Minn.

Exhibit Representative—Harold Dinken, M.D., 1756 Race St., Denver 6.

Preventive Medicine

Secretary—Frank Princi, M.D., University of Cincinnati College of Medicine, Cincinnati 19.

Exhibit Representative—Paul A. Davis, M.D., 633 E. Market St., Akron 4, Ohio.

Radiology

Secretary—Traian Leucutia, M.D., Harper Hospital, Detroit 1.

Exhibit Representative—Richard H. Chamberlain, M.D., 3400 Spruce St., Philadelphia 4.

Surgery, General and Abdominal

Secretary—Gustaf E. Lindskog, M.D., 333 Cedar St., New Haven 11, Conn.

Exhibit Representative—John H. Mulholland, M.D., 550 First Ave., New York 16.

Urology

Secretary—Thomas A. Morrissey, M.D., 40 E. 61st St., New York 21.

Exhibit Representative—Milton M. Coplan, M.D., 550 Brickell Ave., Miami 32, Fla.

CANCER NOMENCLATURE

In the March 30 issue of THE JOURNAL, an article appeared entitled "Standard Nomenclature in Approved Cancer Clinics," by Drs. Edward T. Thompson and Danely P. Slaughter. The forms shown in the article were offered for information and are not endorsed either by the American Medical Association or by the American College of Surgeons as the only type of forms that could be used. Less detailed ones may be quite adequate. Detail may be ideal but is not required for approval of a cancer registry.

The individuals installing systems on cancer nomenclature should acquaint themselves with all available forms. Information can be obtained from individual publishers, as there are many forms on the market. However, the authors of this article and those supporting the Standard Nomenclature of Diseases and Operations are interested only in recommended systems, and the examples were used merely to clarify the text of the article. Unfortunately lack of space prevented the inclusion of all available forms even for comparative comment. The final selection, however, will remain an institutional or personal decision as long as the task of record maintenance is accomplished.

COMMITTEE MEETINGS

Two committees of the A. M. A. Council on Medical Service plan regional meetings Monday, Dec. 2, in Philadelphia, prior to the A. M. A. 11th Clinical Session. The Committee on Maternal and Child Care will hold a regional meeting on perinatal mortality and morbidity. Invitations are being sent to members of maternal and child care committees in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia. The Committee on Aging will hold a regional conference for members of state committees on aging. Subjects to be discussed include physical examinations and a health maintenance program, guides for the operation of medical society committees on aging, medical education in caring for the aged, preretirement counseling, and special research programs of a medical school. Physicians interested in attending either of these sessions should contact the Council for further details.

MEDICAL NEWS

DISTRICT OF COLUMBIA

Personal.—Dr. Roy Hertz, chief, endocrinology branch, National Cancer Institute, is making a four-week tour of South America and will attend the annual Pan American Endocrinology Congress in Buenos Aires and lecture at medical schools in Buenos Aires and Santiago, Chile.

FLORIDA

Society News.—The officers of the Florida Society of Pathologists are: Dr. Wray D. Storey, Tampa, president; Dr. Walter A. Derrick, Orlando, vice-president; Dr. Clarence W. Kitchum, Tallahassee, secretary; and Dr. James B. Leonard, Clearwater, treasurer.

ILLINOIS

Lectures on History of Surgery.—The first of a series of 10 lectures on the history of surgery and related sciences was presented by Horace W. Magoun, Ph.D., of the department of anatomy, University of California Medical School, Los Angeles, Oct. 17, on "The Evolution of Anatomy," at the International Surgeons Hall of Fame. Other lectures in the series will be:

1957

Nov. 7, "Leonardo da Vinci, the Anatomist," Dr. Elmer Belt, formerly professor of surgery, College of Medical Evangelists, Los Angeles.

Dec. 5, "The Evolution of Physiology," Mr. C. D. O'Malley, department of history, Stanford University, San Francisco.

1958

Jan. 9, "The Pharmacy in History," Mr. George B. Griffenhagen, curator, division of medicine and public health, Smithsonian Institution, Washington, D. C.

Jan. 30, "Surgeons in the Invisible World: Immunology and Microbiology," Mr. Morris Leiking, medical historian and archivist, Armed Forces Institute of Pathology, Washington, D. C.

Feb. 20, "Transfusion and Infusion," Dr. Leo Zimmerman, chairman, department of surgery, Chicago Medical School.

March 6, "Physical Diagnosis: Hippocrates, Auenbrugger, and Laennec," Dr. Saul Jarcho, consultant to Surgeon General of the Army.

April 17, "Radiation in the Service of Surgery," Dr. Eugene F. Lutterbeck, professor of radiology, Cook County Graduate School of Medicine.

May 1, "Endocrinology and Surgery," Dr. Rachmiel Levine, chairman, department of medicine, Michael Reese Hospital.

May 15, "Historical Facts About Morgagni, Rokitanski and Virchow, Pathologists," Dr. Esmond R. Long, emeritus professor of pathology, Henry Phipps Institute, University of Pennsylvania, Philadelphia.

The lectures are open to the medical profession and the public. There is no admission charge.

Personal.—Dr. William H. McCain, Springfield, has been appointed medical director of Hill Crest Sanatorium, in Quincy, to succeed Dr. Clare Miller, who has resigned after 27 years of service.

Chicago

Name Chairman of Pathology Department.—Dr. Robert W. Wissler has been named chairman of the University of Chicago department of pathology, effective Oct. 1, succeeding Dr. Paul R. Cannon, who has retired. Dr. Wissler first came to the University in 1941. In 1947 he was awarded the Howard Taylor Ricketts medal for outstanding research by a student in pathology and bacteriology and in 1952 he won the Joseph A. Capps prize of the Chicago Institute of Medicine.

MINNESOTA

Dr. Braasch Honored.—A portrait of Dr. William F. Braasch was presented to the Mayo Clinic and Mayo Foundation by foundation alumni who served in the section of urology of which Dr. Braasch was head from 1914 until his retirement in 1947. The banquet at which Dr. Braasch was guest of honor was attended by representatives of the American Medical Association, the American Association of Genito-Urinary Surgeons, and the American Board of Urology, which last group Dr. Braasch helped to found. Dr. C. D. Creevy, of Minneapolis, director, department of urology, University of Minnesota, who headed the committee planning the tribute, made the presentation.

Mayo Clinic Retirements in October.—The following October retirements of members of the staff of the Mayo Clinic in Rochester have been announced:

Dr. Eugene Leddy, a member of the staff of the Clinic for 32 years. In 1948 he was appointed head of the Section of Therapeutic Radiology, a post he held until 1953, when he became a senior consultant in therapeutic radiology.

Dr. Frederick A. Figi, a member of the staff for 34 years. In 1948 he was named a professor of plastic surgery and in 1950 became head of the section.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

Dr. Richard M. Hewitt, a member of the Clinic staff for 29 years, became head of the Section of Publications in 1933. On Jan. 1, 1958, he will join the Publications Division of the Menninger Foundation in Topeka, Kan.

William H. Feldman, D. V. M., a member of the clinic staff for 30 years, left Rochester about Oct. 1 to become chief of laboratory research in pulmonary diseases in the department of medicine and surgery in the Central Office of the Veterans Administration, Washington, D. C. In 1944, with his colleagues, Dr. Frank D. Mann and Dr. H. Corwin Hinshaw, he received the American Medical Association's gold medal for their scientific exhibit in the field of tuberculosis. In 1955 he was awarded the Trudeau Medal of the National Tuberculosis Association.

MISSOURI

Personal.—Dr. James O'Leary, St. Louis, has been appointed to the National Advisory Neurological Diseases and Blindness Council for a four-year term. Dr. O'Leary is currently professor of neurology at the School of Medicine of Washington University.

Pilot Study of Venereal Disease in Teenagers.—The second in a series of American Social Hygiene Association pilot studies of sex behavior and venereal disease in teenagers has been assigned to the Social Science Institute of Washington University, St. Louis. Director of the Institute is Dr. Nicholas J. Demerath. Dr. Robert Hamblin, research associate of the institute, will direct the study, which is scheduled to begin this month. The initial objective is to "gain more knowledge of the social, cultural, and personality factors that lead teenagers to such sexual behavior as may increase the possibility of venereal disease." Last spring the association announced the appointment of Dr. Martin Loeb, associate professor of social welfare, University of California, Los Angeles, to direct the west coast phase of the teenage study project. The third and last study assignment is expected to be given next month to the sociology department of an Eastern university. Funds for the $92,000 study, which is expected to take at least two years to complete, are being provided by the Mary Reynolds Babcock Foundation of Winston-Salem, N. C., and the Child Welfare Foundation of the American Legion.

NEVADA

State Medical Election.—The officers elected for 1957-1958 by the Nevada State Medical Association are as follows: Dr. Stanley L. Hardy, Las Vegas, president; Dr. Roland W. Stahr, Reno, president-elect; Dr. Ernest W. Mack, Reno, vice-president; and Dr. William A. O'Brien III, Reno, secretary-treasurer.

NEW JERSEY

Society News.—The officers of the New Jersey Society of Internal Medicine are as follows: Dr. Sherwood Vine, Trenton, president; Dr. Frederick [illegible] Elizabeth, vice-president; and Dr. Ralph N. Cagan, Trenton, temporary secretary-treasurer.

Lectures on Sterilization of Equipment.—A series of lectures on the techniques of sterilizing medical and surgical equipment have been announced by Dr. Charles L. Brown, dean, Seton Hall College of Medicine and Dentistry. The series, to be known as the Becton, Dickinson Lectures, began Oct. 16 with Dr. Lawrence P. Garrod's general survey of sterilization techniques in use in the British Isles. Dr. Garrod is editor of the *British Journal of Experimental Pathology*. Subsequent lectures this year, not yet scheduled, will cover gaseous sterilization by Charles R. Phillips, Ph.D., Chemical Corps Biological Laboratories, Camp Detrick, Frederick, Md.; steam sterilization by J. J. Perkins, M.S., director of research, American Sterilizer Company, Erie, Pa.; and chemical disinfection by Earle H. Spaulding, Ph.D., professor of bacteriology, Temple University, Philadelphia. The lectures are open to practicing physicians, hospital personnel, and health officials, and members of the allied sciences. The series was established under a grant by Becton, Dickinson and Company, manufacturers of medical equipment.

NEW YORK

Society News.—The officers of the New York Society for Clinical Ophthalmology for 1957-1958 are: president, Dr. Harvey E. Thorpe; vice-president, Dr. Arthur Linksz; recording secretary, Dr. Jesse M. Levitt; corresponding secretary, Dr. Leon H. Erlich; treasurer, Dr. Henry M. Kera; historian, Dr. Robert S. Coles.

Personal.—Dr. Robert E. L. Nesbitt Jr., professor of obstetrics and gynecology, Albany Medical College, has been elected a member of the Society for Gynecologic Research which has only 50 members in the United States. Dr. Nesbitt is the first faculty member at Albany Medical College to be elected to this membership.

Disaster Training Program.—A stepped-up program to train persons to care for people injured in a major disaster has been announced by the New York State Health Department. The program will train community civil defense teams, each composed of [illegible] persons, to set up and operate improvised emergency cy hospitals. These teams will be capable of transforming a school building into a hospital within a few hours. Each team will include a hospital medical director, surgeons and physicians, director of nurses and hospital nursing staff, medical aides, hospital administrator, pharmacist, x-ray technicians, and an electrician. Each team will form the core of a staff of 220 persons which will be able to operate a 200-bed hospital on an around-the-clock basis. The Office of Medical Defense is making available mobile hospital units to various local civil defense organizations for two-day periods of training. State Health Department personnel will accompany each unit. Each mobile hospital unit includes supplies necessary to equip a 200-bed improvised emergency hospital and keep it in operation for 10 days. A total of 200 units are being placed at strategic locations throughout the state. Two units will be in action until Christmas to train teams at 19 points in Upstate New York. The teams will learn how to obtain such items from a community as food, blood, oxygen, and gasoline, which cannot be stockpiled with the mobile hospital units.

New York City

Memorial Meeting for Dr. Kleinberg.—The Alumni Association of the Hospital for Joint Diseases will have a special memorial meeting Nov. 2, for the late Dr. Samuel Kleinberg, who was editor-in-chief and founder of the *Bulletin of the Hospital for Joint Diseases* and consulting orthopedic surgeon of the Hospital for Joint Diseases and Hospital for Special Surgery. Dr. Joseph E. Milgram will preside, and Dr. Leo Mayer will make the closing remarks. The medical profession is invited.

Dr. Dameshek to Give Wyckoff Lecture.—Dr. William Dameshek, professor of medicine, Tufts College Medical School, Boston, will deliver the annual John Wyckoff Lecture of the New York University College of Medicine, on leukemia, at 4:30 p.m., Nov. 7, in the Alumni Hall of the New York University-Bellevue Medical Center. The lectureship, in memory of Dr. John Wyckoff, former dean of the New York University College of Medicine, is sponsored by the medical fraternity Phi Delta Epsilon.

Personal.—Paul A. Weiss, Ph.D., head, laboratory of developmental biology, Rockefeller Institute, received the 500,000th microscope made by the century-old firm of Ernst Leitz, of Germany, at a ceremony in his laboratory. The presentation of the microscope to Dr. Weiss "is in the tradition of special recognition given by the Leitz organization to world-famous scientists for their fundamental contributions to the knowledge of living structures and their development and pathology." Dr. Weiss is the first American to be so honored.

OHIO

University News.—The annual Phi Delta Epsilon Lectureship, under the auspices of the Beta Epsilon Chapter of the University of Cincinnati College of Medicine, will be held in the Medical College auditorium Nov. 14, 8:30 p. m. Dr. Homer W. Smith, of the New York University College of Medicine, will speak on "De Urina."

Poison Control Center.—The Academy of Medicine of Cleveland recently presented a report of the first six weeks experience of the Poison Control Center. The center was opened primarily as a source of detailed and specialized information for physicians encountering poisoning cases. About two-thirds of the calls at the center have been made by lay people who either could not contact their own private physician or did not have a private doctor. In these instances, when the possibility of a toxic reaction existed, the Poison Control officer has given directions for the induction of vomiting and has advised bringing the victim to the nearest hospital emergency room, if a private physician is unavailable. Presently, all calls to the center are being processed by the staff of the department of pediatrics, University Hospitals. A study has been started on conditions in the home with respect to the occurrence of poisoning incidents.

PENNSYLVANIA

Residency in Allergy.—Applications are being received for appointment to a one-year approved residency in allergy at the Montefiore and Medical Center Hospitals as well as at the U. S. Veteran's Hospital, Pittsburgh. Address inquiries to Dr. Leo H. Criep, Bigelow Apartments, Pittsburgh 19.

Philadelphia

University News.—The annual Phi Delta Epsilon Lectureship, under the auspices of the Sigma Chapter at the Temple University School of Medicine, will be held Nov. 4. The lecturer will be Dr. Julius Lempert of New York, who will discuss his fenestration operation.

Personal.—Dr. Burgess L. Gordon has been appointed executive secretary, Lovelace Foundation for Medical Education and Research. Since 1951 Dr. Gordon has been the president and William J. Mullen Professor of Medicine at Woman's College of Pennsylvania. He is currently president of the American College of Chest Physicians.

SOUTH CAROLINA

Personal.—Dr. Christopher Carl Tully, of South Charleston, has been named "Citizen of the Year" by the South Charleston Lions Club in cooperation with other service clubs of that city for "outstanding service . . . given for the betterment of South Charleston, above and beyond his regular service as a physician."

TENNESSEE

Personal.—Dr. James G. Hughes, professor of pediatrics, University of Tennessee College of Medicine, Memphis, was made an honorary professor of the University of San Carlos of Guatemala at ceremonies held in Guatemala City recently in conjunction with the third Central American Pediatric Congress. Dr. Hughes attended as the official representative of the World Health Organization.—Dr. Leonard W. Edwards, retiring chairman of the Public Service Committee, Tennessee State Medical Association, was awarded a certificate of merit by the association at its recent annual meeting for his achievements as chairman of the committee.—Dr. Frederick A. Martin, Cumberland City, received the "outstanding general practitioner of the year" award from the Tennessee State Medical Association at its recent annual meeting.—Quill E. Cope, Ph.D., Nashville, state commissioner of education, and Nicholas R. DiLuzio, Ph.D., assistant professor of physiology, University of Tennessee College of Medicine, Memphis, have been appointed to the newly established Tennessee Advisory Committee on Atomic Energy.

TEXAS

Society News.—The internists of Amarillo met recently to form the Amarillo Society of Internal Medicine. The purpose of this group is to meet each month for the study of scientific aspects of their specialties. The following officers were elected: Dr. Elwood K. Jones, president; Dr. Isadore Dravin, vice-president; and Dr. Wilbert E. Scott, secretary. Meetings will be held on the first Monday of each month.

State Physical Medicine Society.—Officers of the Texas Physical Medicine and Rehabilitation Society elected at its first formal meeting are Dr. Odon F. von Werssowetz, Gonzales, president; Dr. Vann S. Taylor, Dallas, vice-president; and Dr. Edward M. Krusen, Dallas, secretary-treasurer. Purpose of the society is "to promote the art and sciences of medicine and the betterment of public health through an understanding and utilization of the function and procedures of physical medicine and rehabilitation." Active members must be diplomates of the American Board of Physical Medicine and Rehabilitation, but associate members may include physicians interested in utilization of the functions and procedures of physical medicine and rehabilitation.

VERMONT

State Medical Election.—The following officers of the Vermont State Medical Society have been installed: Dr. James P. Hammond, Bennington, president; Dr. Wayne Griffith, Chester, president-elect; Dr. Frederick W. VanBuskirk, Burlington, vice-president; Dr. Robert L. Richards, Chester, secretary; Dr. Gordon B. Smith, Rutland, treasurer; and Dr. E. Douglas McSweeney, Burlington, auditor.

WASHINGTON

Dr. Blalock to Give Strauss Lecture.—The eighth annual Alfred A. Strauss Lecture, sponsored by the department of surgery, University of Washington School of Medicine, Seattle, will be given Nov. 13 by Dr. Alfred Blalock, head, department of surgery, Johns Hopkins University, Baltimore. Dr. Blalock will speak on the subject "Cardiovascular Surgery—Past and Present." The lecture will be held in the auditorium of the Health Sciences Building at 8:15 p. m.

WEST VIRGINIA

Dr. Fletcher to Lecture in Beckley.—Dr. Charles M. Fletcher, senior lecturer in medicine (chest diseases), Postgraduate School of London, will deliver three lectures at the Memorial Hospital in Beckley. The first lecture is scheduled for 3 p. m., Nov. 17, on "The Natural History and Management of Coal Workers' Pneumoconiosis." The second lecture will be on "The Diagnosis of Bronchitis and Emphysema," at 4 p. m., Nov. 18. The final lecture will be given on "The Ends and Means of Research in Respiratory Disease," 4 p. m., Nov. 19.

Personal.—Dr. Ward Wylie of Mullens, long a member of the Senate of West Virginia, has been named president-elect of the National Boxing Association and will be installed in 1958 at the annual meeting. At the same time, he will become a member of the executive committee of the National Wrestling Association.—Dr. Charles E. Hamner, Columbus, Ohio, has been named superintendent of Huntington State Hospital to succeed Dr. Norton H. Bare. Dr. Hamner, who has been serving as assistant superintendent of Columbus State Hospital, was formerly superintendent of Spencer State Hospital.

WISCONSIN

Society News.—The Wisconsin Society of Internal Medicine has elected the following officers: president, Dr. Robin N. Allin, Madison; president-elect, Dr. J. LeRoy Sims, Madison; and secretary-treasurer, Dr. Paul G. LaBissoniere (reelected), Milwaukee. The society voted to affiliate with the newly organized American Society of Internal Medicine.

Appoint Chairman of Psychiatry Department.—Dr. Robert Roessler has been named chairman, department of psychiatry, University of Wisconsin Medical School, Madison. Since the division of the department of neuropsychiatry into separate departments of psychiatry and neurology, he has been serving as acting chairman of the psychiatry department. Dr. Roessler has been on the faculty of the university since July 1, 1950. He received a Ph.D. at the University of Wisconsin in 1942, and served with the U. S. Army Medical Corps from 1946 to 1948. Before coming to Wisconsin he was an instructor in psychiatry in the University of Rochester Medical School and assistant psychiatrist, Strong Memorial Hospital. Dr. Roessler holds the rank of associate professor.

State Society Plans Medical Museum.—Plans for the Medical Museum of Wisconsin, the state's first shrine of medical sciences, have been revealed by the State Medical Society. The museum, at Prairie du Chien, will depict progress made by successive generations of Wisconsin physicians. The backdrop will be Fort Crawford's Military Hospital, constructed in the late 1820's.

The society has initiated a compaign to raise $344,960 for the museum. Plans call for the restoration or construction of four units, covering two city blocks. The existing military hospital will be renovated. New buildings will include a museum, an administration structure and a pavilion and a parking area, all overlooking the Mississippi River. The museum proper will tell the story of medicine and its ancillary services. Contributions made by Wisconsin physicians to the art of healing will be featured. Exhibits will be changed periodically.

The museum will include a projection room, with appropriate films available. In the same area will be a complete doctor's office as of the 1870's. The administration building, east of the museum, will house the curator's workshop, an office, waiting and rest rooms. The State Historical Society will operate the museum, working in cooperation with the State Medical Society's Section on Medical History.

GENERAL

Grants for Hematology Research.—The Hematology Research Foundation has announced the availability of grants-in-aid for research in blood diseases for a period of one year. Applications must be submitted no later than Dec. 15, to the Hematology Research Foundation, 64 W. Randolph St., Chicago 1. Nine copies of applications are requested. (Application forms are available upon request.) Awards will be announced by the medical advisory board in January, 1958. The board will choose the applicants on the basis of merit of the proposed research project.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States, its territories and possessions in the weeks ended as indicated:

Area	Oct. 5, 1957		Oct. 6, 1956
	Paralytic Type	Total Cases	Total Cases
New England States			
Maine	..	..	1
New Hampshire	..	..	..
Vermont	1	1	..
Massachusetts	..	..	2
Rhode Island	..	..	..
Connecticut	..	..	1
Middle Atlantic States			
New York	8	15	53
New Jersey	1	4	13
Pennsylvania	..	7	8
East North Central States			
Ohio	7	16	41
Indiana	5	10	15
Illinois	10	18	51
Michigan	9	25	34
Wisconsin	1	3	31
West North Central States			
Minnesota	5	6	9
Iowa	..	2	29
Missouri	2	5	15
North Dakota	1	1	..
South Dakota	..	1	2
Nebraska	..	4	31
Kansas	1	2	5
South Atlantic States			
Delaware	..	..	5
Maryland	..	..	7
District of Columbia	2	2	1
Virginia	6	8	13
West Virginia	2	4	5
North Carolina	3	5	9
South Carolina	1	3	1
Georgia	1	1	8
Florida	2	4	12
East South Central States			
Kentucky	3	5	1
Tennessee	5	11	2
Alabama	..	..	9
Mississippi	..	1	4
West South Central States			
Arkansas	4	4	5
Louisiana	2	4	20
Oklahoma	2	4	8
Texas	9	13	29
Mountain States			
Montana	..	..	5
Idaho	1	2	1
Wyoming	..	..	2
Colorado	..	2	5
New Mexico	..	..	3
Arizona	..	..	6
Utah	..	..	10
Nevada	..	..	1
Pacific States			
Washington	1	1	7
Oregon	..	..	10
California	8	17	72
Territories and Possessions			
Alaska	..	..	1
Hawaii	2	3	2
Puerto Rico	1	1	1
Total	106	215	606

Public Health Meeting in Cleveland.—The 85th annual meeting of the American Public Health Association will be held Nov. 11-15 in Cleveland, with headquarters at the Public Auditorium. Over 40 related organizations will hold simultaneous meetings. The presidential address will be given by John W. Knutson, D.D.S., Nov. 12. The Delta Omega Lecture, "Some Aspects of Multidisciplinary Professions," will be presented by Lowell J. Reed, Ph.D., president emeritus, Johns Hopkins University, Baltimore. The subject for the general assembly will be "Are We Getting Public Health in Tune with the Times?" The association symposium will be presented in two parts, the first Nov. 11, and the second Nov. 15. About 400 papers will be presented during the 75 sessions. Round-table and panel discussions are planned within the various sections. Scientific and technical exhibits are scheduled, and a program of entertainment is arranged. Registration fee is $6. For information write the American Public Health Association, Inc., 1790 Broadway, New York City.

Psychiatric Meeting in Los Angeles.—The western divisional meeting of the American Psychiatric Association, a joint meeting with the West Coast Psychoanalytic Societies, will be held Nov. 20-24 at the Statler Hotel, Los Angeles. Papers to be presented will be grouped in the following categories: group psychotherapy, experimental psychiatry, psychosomatic medicine, hospitals, drugs, individual psychotherapy, social psychiatry, child psychiatry, and psychoanalytic papers. Dr. Ralph M. Gerard, professor of neurophysiology, University of Michigan School of Medicine, Ann Arbor, will deliver the academic lecture Nov. 23. Other guest speakers include Dr. Franz Alexander, Los Angeles; Dr. Sydney Margolin, Denver; Dr. René Spitz, Denver; and Aldous Huxley. A series of panels and workshops is planned on "An Integrated Approach to the Objective Study of the Therapeutic Process," "The Therapeutic Community," "Psychological Implications of Attitudes Toward Death," and "Tranquilizing Drugs and Integrating Mechanisms: A Multidisciplinary Approach." Nonmembers will be permitted to register on presenting proper professional credentials. For information write Dr. Allen J. Enelow, 435 Roxbury Drive, Beverly Hills, Calif.

Society News.—At the 58th annual meeting of the **American Roentgen Ray Society** the following officers were elected: president-elect, Dr. Barton R. Young, Germantown, Pa.; secretary, Dr. C. Allen Good, Rochester, Minn.; treasurer, Dr. Robert K. Arbuckle, Oakland, Calif. (re-elected); and chairman, executive council, Dr. Wilbur Bailey, Los Angeles, Calif. Dr. Wendell G. Scott, St. Louis, Mo., assumed the office of the presidency. The 1958 meeting will be held in Washington, D. C., Sept. 27-Oct. 3, in the Shoreham Hotel.——The American **Academy of Physical Medicine and Rehabilitation** announces the election of the following officers for 1957-1958: Dr. George D. Wilson, Asheville, N. C., president; Dr. Louis B. Newman, Chicago, president-elect; Dr. Clarence W. Dail, San Gabriel, Calif., vice-president; Dr. Harriet E. Gillette, Atlanta, Ga., secretary; Dr. James W. Rae Jr., Ann Arbor, Mich., treasurer; and Miss Dorothea C. Augustin, Chicago, executive secretary.——The following officers of the **Interstate Postgraduate Medical Association of North America** have been elected: president, Dr. Tom D. Spies, Birmingham, Ala.; president-elect, Dr. Samuel F. Marshall, Lahey Clinic, Boston; vice-presidents, Drs. Robert A. Hedgcock, Frankfort, Ind., James R. Jarvis, Van Wert, Ohio, and Francis P. Rhoades, Detroit, secretary, Dr. Erwin R. Schmidt, Madison, Wis.; and treasurer, Dr. J. Mather Pfeiffenberger, Alton, Ill.

Grant for Study of Graduate Education.—Carnegie Corporation of New York has announced that it will sponsor a two-year $100,000 study of graduate education in the United States. The project will be conducted by Bernard Berelson, University of Chicago professor of the behavioral sciences, who will investigate the objectives, standards, and functions of the graduate school in the American system of higher education. He will make a broad review of the history of graduate education and its institutions to locate and interpret major trends and active issues. Among the specific topics he will survey are the recruitment of students and placement of graduates; relations between graduate education and undergraduate programs; the development of postdoctoral programs; and problems of financial support. In his final report he will make recommendations about the formation of graduate school policies in the coming decades.

New Journal of Rheumatic Diseases.—The American Rheumatism Association announces publication of a new medical journal, *Arthritis and Rheumatism: The official Journal of the American Rheumatism Association.* The journal, published by Grune & Stratton, will appear bimonthly starting with the January-February issue of 1958. Publication committee is composed of Drs. Richard H. Freyberg, William H. Kammerer, John Lansbury, Charles Ragan, and Charles L. Short. Editor is Dr. William S. Clark. The journal will cover the field of connective tissue disorders, in particular rheumatoid arthritis, osteoarthritis, rheumatic fever, gout, the so-called "collagen diseases," and nonarticular rheumatism. Special departments will include news and notices, correspondence, editorials, program reports, and book reviews. Inquiries should be addressed to Dr. Edward F. Hartung, 580 Park Ave., New York 21, N. Y.

Southern Medical Association Meeting.—The 51st annual meeting of the Southern Medical Association will be held Nov. 11-14 in Miami Beach, Fla. with general headquarters at the Miami Beach auditorium. The scientific assembly will include the following panel discussions: chronic rhinitis, atopic eczema, advances in therapy, coronary artery diseases and the various aspects of the problem from an industrial point of view, role of the laboratory in the diagnosis of endocrine diseases, resuscitation of the newborn infant, and ulcerative colitis. Two symposiums are planned: "Mycology," moderated by Dr. Wiley M. Sams, Miami, and "Stapes Mobilization," moderated by Dr. J. Brown Farrior, Tampa. A luncheon honoring Dr. John P. Culpepper Jr., president of the association, will be held in the di Lido Hotel Nov. 11, at which an address will be given by Dr. George F. Lull, secretary-general manager, American Medical Association. Six color television programs will be screened as a part of the regular scientific program. A maximum of 30 hours credit on postgraduate requirements may be received for attendance. Entertainment includes the president's night annual dinner dance, Nov. 13 and the 34th annual golf tournament, Nov. 11. Post-convention tours and exhibits are planned. For information write the Southern Medical Association, 1020 Empire Building, Birmingham 3, Ala.

CANADA

New Journal of Surgery.—The Canadian Medical Association has announced it will publish a quarterly *Canadian Journal of Surgery*, the first issue of which appeared on Oct. 1. The editorial board consists of professors of surgery from 12 Canadian medical schools with Dr. R. M. James, of Toronto, president, Royal College of Physicians and Surgeons of Canada, as chairman of the board. Publication will be under general supervision of the editors of the *Canadian Medical Association Journal.* The new journal will carry original articles, case reports, editorials, and book reviews in French and English; original articles in English will carry a summary in French and vice versa. The historical section will feature the history of Canadian surgery. Subscription has been set at $10 for the first year. Inquiries should be addressed to the *Canadian Journal of Surgery*, C. M. A. House, 150 St. George St., Toronto 5, Ontario.

CORRECTION

Diaper Rash.—The editorial, in THE JOURNAL, Sept. 21, page 254, entitled "Diaper Rash," stated that "3% phenylmercuric acetate was the best antiseptic." This is the strength supplied by the manufacturers. It should be diluted at least 1:4,000 to 1:5,000 before use. The 3% strength may cause dermatitis if allowed to remain on the skin.

EXAMINATIONS AND LICENSURE

MEDICAL SPECIALTY BOARDS

American Board of Internal Medicine: *Written.* Oct. 20, 1958. *Oral.* New Orleans, Feb. 4-7; Philadelphia, April 23-26; San Francisco, June 18-21; Chicago, Oct. 13-16. Exec. Sec.-Treas., Dr. William A. Werrell, One West Main St., Madison 3, Wis.

American Board of Neurological Surgery: Examination given twice annually, in the spring and fall. In order to be eligible a candidate must have his application filed at least six months before the examination time. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, St. Louis 10.

American Board of Obstetrics and Gynecology. Various locations in the United States and Canada. *Part I.* Jan. 2. *Part II.* Chicago, May 7-17. Final date for filing application was September 1. Sec., Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Written.* January 1958. Final date for filing application was July 1. Secy., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland 9, Maine.

American Board of Orthopaedic Surgery: *Part I.* April 3-4, Rochester, Minnesota, Denver, Colorado, Washington, D. C. Final date for filing application is Nov. 30. *Part II.* New York City, Jan. 29-31, 1958. Sec., Dr. Sam W. Banks, 116 South Michigan Avenue, Chicago 3.

American Board of Physical Medicine and Rehabilitation: *Oral and Written.* Peoria, Ill., June 20-21. Final date for filing application is Feb. 1. Sec., Dr. Earl C. Elkins, 200 First St., S. W., Rochester, Minn.

American Board of Plastic Surgery: *Oral and Written Examination.* San Francisco, Oct. 31-Nov. 2. Final date for filing case reports was July 1. Corresponding Sec., Miss Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8.

American Board of Preventive Medicine: *In Public Health. Oral and Written.* Cleveland, Nov. 7-9. Sec., Dr. Thomas F. Whayne, 3438 Walnut St., Philadelphia.

American Board of Proctology: *Oral and Written, Parts I and II.* September 1958. Final date for filing application is March 15. Sec., Dr. Stuart T. Ross, 520 Franklin Ave., Garden City, N. Y.

American Board of Psychiatry and Neurology: *Oral.* San Francisco, March 17-18. Final date for filing application is Dec. 17. Sec., Dr. David A. Boyd, Jr., 102-110 2nd Ave., S. W., Rochester, Minn.

American Board of Radiology: Chicago, May 20-24. Final date for filing application is Jan. 1. Sec., Dr. H. Dabney Kerr, Kahler Hotel Bldg., Rochester, Minn.

American Board of Surgery: *Part II.* Indianapolis, Nov. 18-19; Cincinnati, Dec. 16-17; New Orleans, Jan. 13-14; Durham, N. Car., Feb. 10-11; Baltimore, March 10-11; Chicago, May 12-13; Los Angeles, June 16-17 and Portland, Oregon, June 20-21. Sec., Dr. John B. Flick, 22 So. 15th St., Philadelphia 2.

Board of Thoracic Surgery: *Written.* Various centers throughout the country, February 1958. Final date for filing application is December 1. Sec., Dr. William M. Tuttle, 1151 Taylor Avenue, Detroit 2, Mich.

American Board of Urology: *Written examination.* Various cities throughout the country. *Pathology and Oral Clinical.* February 1958. Location not decided. Exec. Secretary, Mrs. Ruby L. Griggs, 30 Westwood Road, Minneapolis 16.

DEATHS

Blankenhorn, Marion Arthur ⊕ Cincinnati; born in Orrville, Ohio, Nov. 13, 1885; Western Reserve University School of Medicine, Cleveland, 1914; professor emeritus of medicine at the University of Cincinnati College of Medicine, where in 1935 he was appointed to the Gordon and Helen Hughes Taylor chair of internal medicine; from 1929 to 1935 professor of clinical medicine at his alma mater; volunteer assistant at the Rockefeller Institute for Medical Research, New York City, 1925-1926; during World War I served as a captain with the Western Reserve Medical Unit, Base Hospital No. 4, first U. S. Army hospital unit to embark for France; during World War II an investigator for the Office of Scientific Research and Development in a project to study the physiological effects of high altitude and also medical consultant for the Seventh Corps area; appointed special consultant to the Surgeon General for the Far East Command in 1948 and the European Theater of Operations in 1951; at one time directed medical research in the field of nutrition in Cincinnati and Birmingham, Ala.; in 1934-1935 vice-chairman of the Section on Practice of Medicine of the American Medical Association and in 1948-1949 chairman of the Section on Internal Medicine; past-president of the Cincinnati Academy of Medicine; in 1956 the U. S. Public Health Service appointed him head of a research project under the auspices of the American College of Physicians, of which college he was formerly governor for Ohio, regent, and later vice-president; member of the Association of American Physicians, Central Society for Clinical Research, American Society for Clinical Investigation, and the American Society for Experimental Pathology; specialist certified by the American Board of Internal Medicine; served as director of the department of internal medicine, Cincinnati General Hospital; director of medical education at the Jewish Hospital; in 1937 received the honorary degree of doctor of science from Wooster (Ohio) College and in 1957 received the honorary degree of doctor of humane letters from the University of Cincinnati; died Sept. 3, aged 71.

Moore, Merrill ⊕ Boston; born at Columbia, Tenn., Sept. 11, 1903; Vanderbilt University School of Medicine, Nashville, 1928; specialist certified by the American Board of Psychiatry and Neurology; member of the American Neurological Association, American Psychiatric Association, American Psychopathological Association, Sigma Chi, and Phi Beta Kappa; for many years taught psychiatry at Harvard Medical School; since 1955 research associate, laboratory of human relations, Harvard; at various times on the staffs of the Massachusetts General, Beth Israel, Boston Psychopathic, and Boston City hospitals; since 1954 on the staff at Bournewood Hospital, Brookline, Mass.; in 1941 appointed medical director of the Washingtonian Hospital; during World War II served in the medical corps, Army of the United States, attaining the rank of colonel; awarded the Bronze Star for meritorious achievement in the Southwest Pacific; awarded the Army Commendation Ribbon for outstanding service at Nanking, China, in 1946; reputed to have written more sonnets than any other poet in the English language; author of "M:One Thousand Autobiographical Sonnets," "Clinical Sonnets," and others; contributed numerous scientific articles on alcoholism; died Sept. 20, aged 54, of adenocarcinoma.

De Kleine, William ⊕ Buffalo; born in Jamestown, Mich., Nov. 28, 1877; Northwestern University Medical School, Chicago, 1906; received his master of science degree at the University of Michigan School of Public Health, Ann Arbor, 1915; then was director of the tuberculosis survey campaign for the Michigan State Board of Health; full-time health officer of Flint, Mich., from 1917 to 1922 and Saginaw, Mich., from 1922 to 1925; directed the five-year child health demonstration at Mansfield Ohio, with funds furnished by the Red Cross; supervised similar demonstrations at Fargo, N. D., and Salem, Ore.; in 1927 became associated with the American Red Cross and the following year was named director of medical and health service; from 1941 to 1944 was in private practice in Washington D. C.; state health commissioner of Michigan from 1944 to 1947; once president of the Michigan Tuberculosis Association and the Michigan Public Health Association; formerly director of the National Tuberculosis Association; member of the Michigan State Medical Society; died Sept. 20, aged 79, of cerebral hemorrhage.

Webb, Roscoe Clayton ⊕ Minneapolis; born in Amiret, Minn., in 1890; Johns Hopkins University School of Medicine, Baltimore, 1914; clinical associate professor of surgery at the University of Minnesota Medical School; member of the founders group of the American Board of Surgery; certified by the National Board of Medical Examiners; veteran of World War I; member Western Surgical Association, American Association for the Surgery of Trauma, Association of Railroad Chief Surgeons

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⊕ Indicates Member of the American Medical Association.

ohns Hopkins Surgical Society, New York Hospital Alumni Association, Great Northern Railway Surgeons' Association, and the Minneapolis Academy of Medicine, of which he was past-president; ounded the Minneapolis Surgical Society in 1922 and was its first president; fellow of the American College of Surgeons; became division surgeon of the Great Northern Railway in 1922 and was appointed chief surgeon in 1926; consultant, Maternity Hospital; associated with Asbury and Abbott hospitals, and Northwestern Hospital, where he died Aug. 16, aged 67, of cerebral astrocytoma.

Davies, John James ⊕ Moline, Ill.; born in Davenport, Iowa, Oct. 19, 1915; State University of Iowa College of Medicine, Iowa City, 1941; specialist certified by the American Board of Orthopaedic Surgery; member of the American Academy of Orthopaedic Surgeons and the Industrial Medical Association; fellow of the International College of Surgeons and the American College of Surgeons; resigned from the U. S. Public Health Service in July, 1952; during World War II served in the Coast Guard and was wounded in action while serving on the U. S. Coast Guard Cutter Spencer; received the European-Middle Eastern-African Theater ribbon with three bronze stars and the American Theater victory ribbon; on the staffs of the Hammond-Henry District Hospital in Geneseo, St. Francis Hospital in Kewanee, and Lutheran and St. Anthony hospitals, and Moline Public Hospital, where he died Aug. 23, aged 41, of acute myocardial infarction.

Scott, Roy Wesley ⊕ Cleveland; born in New Albany, Ind., March 20, 1888; Western Reserve University School of Medicine, Cleveland, 1913; professor of clinical medicine at his alma mater; specialist certified by the American Board of Internal Medicine; chairman of the Section on the Practice of Medicine of the American Medical Association, 1941-1942, and a member of the House of Delegates in 1943; member of the American Rheumatism Association, Central Society for Clinical Research, of which he was past-president, and the American Society for Clinical Investigation; fellow of the American College of Physicians; past-president of the American Heart Association; during World War II, member of the subcommittee on cardiovascular disease, National Research Council; served as physician-in-chief at the Cleveland City Hospital; died in the Cleveland Clinic Hospital May 26, aged 69.

Stewart, Winifred Bayard ⊕ Philadelphia; born in Philadelphia Dec. 31, 1899; University of Pennsylvania School of Medicine, Philadelphia, 1926; professor of neurology at the Woman's Medical College of Pennsylvania; specialist certified by the American Board of Psychiatry and Neurology; member of the American Academy of Neurology and the American Psychiatric Association; member of the board of trustees, Legal Aid Society; member of the board of managers, Bancroft School in Haddonfield, N. J.; since 1951 director of the neuropsychiatric department of Quarter Sessions Court; associate in neurology, Graduate Hospital of the University of Pennsylvania and chief, department of psychiatry, Philadelphia General Hospital, where she died Aug. 20, aged 57, of carcinoma of the right breast with generalized metastases.

Teleky, Ludwig, New York City; born in Vienna, Austria, July 12, 1872; Medizinische Fakultat der Universitat, Vienna, Austria, 1896; served with the division of industrial hygiene, New York State Department of Labor and as technical adviser to the division of occupational hygiene of the state department of public welfare of Illinois; formerly honorary secretary of the Austrian Central Organization for Prevention of Tuberculosis and editor of its journal; served as medical expert in the Workers Accident Insurance of Vienna and Lower Austria; in 1939 awarded the Devoto prize of the Reale Instituto Lombardo di Science and letters in Milano for the best publication in industrial hygiene; author of "History of Factory and Mine Hygiene"; died in the Jewish Memorial Hospital Aug. 20, aged 85.

Maisel, Irving ⊕ Newark, N. J.; born in Newark June 19, 1914; Louisiana State University School of Medicine, New Orleans, 1939; specialist certified by the American Board of Urology; member of the American Urological Association; veteran of World War II and was awarded the Silver Star for gallantry in action in New Guinea; on the staffs of the Irvington (N. J.) General Hospital, St. James Hospital, and the Harrison S. Martland Medical Center; associated with the Veterans Administration Hospital in East Orange, and the New York Polyclinic Medical School and Hospital in New York City; adjunct, urological service, Newark Beth Israel Hospital, where he died May 25, aged 42, of coronary thrombosis.

Pleasants, Jacob Hall ⊕ Baltimore; born in Baltimore County Sept. 12, 1873; Johns Hopkins University School of Medicine, Baltimore, 1899, where from 1902 to 1934 he was an instructor and associate in medicine, and since 1920 a trustee; trustee and past-president of the board of trustees, the Peabody Institute; since 1934 vice-president of the Maryland Historical Society and a member since 1898; served as trustee of the Baltimore Museum of Art; member of the American Art Research Council; from 1907 to 1921 president, Municipal Department of Charities and Corrections of the City of Baltimore; for many years editor of the "Archives of Maryland"; died in the Johns Hopkins University Hospital Aug. 24, aged 83.

Smith, Ferris ⊕ Grand Rapids, Mich.; born in Pontiac, Mich., Oct. 25, 1884; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1910; served on the faculty of his alma mater; specialist certified by the American Board of Otolaryngology and the American Board of Plastic Surgery; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; past-president of the American Association of Oral and Plastic Surgeons; during World War I served in the Royal Army Medical Corps in England and was a plastic surgeon in Queens Hospital; *on the staff of the Blodgett* Memorial Hospital, St. Mary's Hospital, and Butterworth Hospital; died Sept. 18, aged 72.

Veasey, Clarence Archibald, Spokane, Wash.; born in Pocomoke City, Md., Aug. 9, 1869; Jefferson Medical College of Philadelphia, 1890; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Ophthalmological Society; fellow of the American College of Surgeons; past-president of the Pacific Coast Oto-Ophthalmological Society and the Spokane Academy of Ophthalmology and Oto-Laryngology; member of the board of the Spokane Medical Library *since its founding; served on the staffs of* Deaconess Hospital and St. Luke's Hospital; died Aug. 11, aged 88, of arteriosclerotic heart disease.

Leiser, Rudolf ⊕ Dearborn, Mich.; born in Breslau, Germany, Nov. 16, 1901; Schlesische-Friedrich-Wilhelms-Universatät Medizinische Fakultät, Breslau, Prussia, Germany, 1927; specialist certified by the American Board of Psychiatry and Neurology; fellow of the American College of Physicians; member of the American Trudeau Society, American Psychosomatic Society, and the American Psychiatric Association; instructor in psychiatry at Wayne University College of Medicine; associated with the Wayne County General Hospital and Infirmary in Eloise, St. Joseph Mercy and St. Clair hospitals and Sinai Hospital in Detroit; where he died April 22, aged 55, of cerebral hemorrhage.

Warshaw, Samuel Abraham, Brooklyn; born Feb. 16, 1891; Long Island College Hospital, Brooklyn, 1915; adjunct professor of physical medicine and rehabilitation at the New York Polyclinic Medical School and Hospital, New York City; member of the Medical Society of the State of New York and the American Society of Physical Medicine and Rehabilitation; specialist certified by the American Board of Physical Medicine and Rehabilitation; on the staffs of the Coney Island Hospital and New York Polyclinic Medical School and Hospital; veteran of World War I; died in the Beth El Hospital April 27, aged 66.

Hauenstein, Barton Ferris, Buffalo; born in Buffalo in 1886; University of Buffalo School of Medicine, 1914; served on the faculty of his alma mater; member of the Medical Society of the State of New York and the American Public Health Association; retired director of the Erie County Laboratories; formerly director of the combined Tompkins County-State Laboratory at Ithaca, N. Y.; veteran of World War I; from 1919 to 1925 on the staff of the Buffalo General Hospital; died in the Roswell Park Memorial Institute May 2, aged 70, of mediastinal abscess.

Nagle, Patrick Sarsfield ⊕ Oklahoma City, Okla.; born in Kingfisher, Okla., Nov. 10, 1902; University of Oklahoma School of Medicine, Oklahoma City, 1928; associate professor of surgery at his alma mater; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; veteran of World War II; associated with the St. Anthony Hospital, University of Oklahoma Hospital, Oklahoma Hospital for Crippled Children, and Veterans Administration Hospital, where he died May 8, aged 54, of carcinoma of the stomach.

Noyes, Ira Hart ⊕ Providence, R. I.; born in Stonington, Conn., July 29, 1885; Yale University School of Medicine, New Haven, 1908; specialist certified by the American Board of Obstetrics and Gynecology; *fellow of the* American College of Surgeons; went overseas with the American Expeditionary Force during World War I; associated with Rhode Island, *Miriam,* Charles V. Chapin, Roger Williams General, Butler, and Providence Lying-in hospitals and the *Westerly (R. I.) Hospital, where* he died May 3, aged 71, of injuries received in an automobile accident.

Oram, Joseph Hubbard ⊕ Paterson, N. J.; Jefferson Medical College of Philadelphia, 1899; served on the faculty of his alma mater; fellow of the American College of Surgeons; past-president of the Society of Surgeons of New Jersey and the Passaic County Medical Society; veteran of World War I; served as medical *examiner* for the Pennsylvania Railroad; a consultant to the Dover (N. J.) General Hospital and Good Samaritan Hospital in Suffern, N. Y.; *associated with* Paterson General Hospital, where he died Aug. 24, aged 81, of bleeding peptic ulcer.

Smith, John Sam ⊕ Montgomery, Ala.; University of Louisville (Ky.) School of Medicine, 1936; specialist certified by the American Board of Pediatrics; member of the American Academy *of* Pediatrics; past-president of the Alabama Pediatric Society; interned at the St. Francis Hospital and Sanatorium in Colorado Springs, Colo.; served *a residency* at the Louisville City Hospital, Louisville, Ky., Children's Hospital, Birmingham, Ala., and the Children's Hospital in Denver; died in St. Margaret's Hospital Aug. 13, aged 45, of cerebral hemorrhage and hypertensive cariovascular disease.

May, Francis Albert ⊕ Cheektowaga, N. Y.; University of Buffalo School of Medicine, 1953; interned at the Edward J. Meyer Memorial Hospital in Buffalo, where he served a residency at the Veterans Administration Hospital; veteran of World War II; certified by the National Board of Medical Examiners; on the staffs of the Sisters of Charity Hospital and the Deaconess Hospital; died of a heart attack while swimming in a quarry pool six miles east of Port Colborne, Ontario, Canada, Aug. 7, aged 30.

Oatman, Clyde Danford, Colonel, U. S. Army retired, San Antonio, Texas; Syracuse University College of Medicine, 1906; service member of the American Medical Association; veteran of World War I; commissioned a captain in the medical corps of the regular Army in September, 1920; during World War II commanded hospitals at Camps Custer and Gruber; retired from active military duty in 1946; served on the staff of the Texas State Hospital; died April 27, aged 75, of myocardial degeneration.

Wagoner, George ⊕ Bryn Mawr, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1922; professor of orthopedic pathology at the University of Pennsylvania Graduate School of Medicine; specialist certified by the American Board of Orthopaedic Surgery; member of the American Orthopaedic Association; veteran of World Wars I and II; associated with Bryn Mawr (Pa.) Hospital, Woman's Hospital, Philadelphia, and Pottstown (Pa.) Hospital; died in Ligonier April 29, aged 61, of coronary occlusion.

Wheeler, Lewis Hawley, Captain, U. S. Navy, retired, Wesport, Conn.; Yale University School of Medicine, New Haven, Conn., 1897; service member of the American Medical Association; entered the U. S. Navy in 1904 and retired Feb. 18, 1930; veteran of World War I; during President Wilson's administration served as physician on the presidential yacht, Mayflower; consultant, Norwalk (Conn.) Hospital; director, Westport Sanitarium; died Aug. 29, aged 81, of cerebral hemorrhage.

Wiig, Laurence Maxon ⊕ Honolulu, Hawaii; University of Pennsylvania School of Medicine, Philadelphia, 1933; specialist certified by the American Board of Surgery; certified by the National Board of Medical Examiners; fellow of the American College of Surgeons; on the staffs of the Queen's, Kauikeolani Children's, Kuakini, Kapiolani Maternity and Gynecological, and Leahi hospitals; at one time practiced in San Angelo, Texas; died July 30, aged 47.

Young, Edith Frances ⊕ Marysville, Calif.; University of California School of Medicine, San Francisco, 1928; member of the American Public Health Association; bi-county health officer, Sutter–Yuba Health Department; for many years pediatrician in the bureau of maternal and child health of the state department of public health; at one time associated with the Los Angeles County Health Department; formerly health officer of Sonoma County; died in San Francisco Aug. 17, aged 61.

Anagnos, George Dionisiou, Chicago; Chicago Medical School, 1930; died Aug. 31, aged 59, of acute myocardial infarction and arteriosclerotic heart disease.

Banks, Jeff, Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1934; professor of anatomy at his alma mater, where for many years he was chairman of the committee on admission; member of the Arkansas Medical Society; died Aug. 13, aged 52, of acute myocardial infarction.

Barr, Richard Everett ⊕ Beaumont, Texas; University of Texas School of Medicine, Galveston, 1920; specialist certified by the American Board of Radiology; served as medical director of the Frances Ann Lutcher Hospital in Orange; associated with the Hotel Dieu and Baptist hospitals; past-president of the Texas Radiological Society; died Aug. 14, aged 69, of hypostatic pneumonia following cerebral hemorrhage.

Bates, Charles Adelbert ⊕ Dalton, Ohio; Ohio State University College of Medicine, Columbus, 1947; interned at Mercy Hospital in Canton; served on the staff of the Apple Creek (Ohio) State Hospital and the Massillon (Ohio) State Hospital; died in the Massillon (Ohio) City Hospital Aug. 30, aged 38, of coronary occlusion.

Bogue, Homer Adelbert, Ontario, Calif.; University of Vermont College of Medicine, Burlington, 1886; an associate member of the American Medical Association; died Aug. 7, aged 96, of cardiovascular disease, and bronchopneumonia.

Bottorff, David Combs ⊕ Charlestown, Ind.; University of Louisville (Ky.) School of Medicine, 1934; interned at Louisville (Ky.) City Hospital; died July 22, aged 50, of coronary occlusion.

Brenner, Paul Melvin ⊕ Quincy, Ill.; St. Louis University School of Medicine, 1935; member of the Industrial Medical Association; associated with the Blessing Hospital and St. Mary's Hospital, where he died July 16, aged 49, of bronchogenic carcinoma.

Bridges, John H., Bolivar, Mo.; St. Louis College of Physicians and Surgeons, 1905; died July 12, aged 90.

Brier, Edward C., Seattle; University of Indianapolis Medical Department, 1898; for many years admitting surgeon for the King County Hospital; died Aug. 17, aged 89, of coronary thrombosis.

Carey, Hollis Layton ⊕ Gridley, Calif.; University of Oregon Medical School, Portland, 1936; member of the American Academy of General Practice; past-president of the Butte-Glenn Medical Society; on the staff of the Biggs-Gridley Memorial Hospital, where he died Aug. 1, aged 54, of carcinoma of the cecum.

Chernenkoff, Peter William ⊕ Bend, Ore.; College of Medical Evangelists, Loma Linda and Los Angeles, 1937; veteran of World War II; on the staff of St. Charles Hospital; died Aug. 17, aged 51, of coronary thrombosis.

Clements, James David, Ordinary, Va.; Medical College of Virginia, Richmond, 1918; died in the Johnston-Willis Hospital, Richmond, Aug. 20, aged 63, of congestive heart failure.

Cocklin, William Karl, Yakima, Wash.; State University of Iowa College of Medicine, Iowa City, 1907; past-president of the Yakima County Medical Society; veteran of World War I; member and past-president of the staff, St. Elizabeth's Hospital; died in the Yakima Valley Memorial Hospital Aug. 21, aged 73, of bronchogenic carcinoma.

Cosgrove, John Joseph, New York City; Columbia University College of Physicians and Surgeons, New York City, 1903; for many years on the staff of St. Clare's Hospital; died Aug. 19, aged 78.

Craven, Lawrence Lewellyn ⊕ Glendale, Calif.; University of Minnesota Medical School, Minneapolis, 1914; veteran of World War I; member of the Glendale Planning Commission; on the staff of the Memorial Hospital; died Aug. 18, aged 74, of angina pectoris.

Davis, Hugh ⊕ Seguin, Texas; University of Texas School of Medicine, Galveston, 1924; county health officer; on the staff of the Seguin Hospital; died Aug. 15, aged 63, of coronary occlusion.

Desprez, Louis Willoughby, Chicago; Chicago College of Medicine and Surgery, 1913; veteran of World War I; died in the Veterans Administration Research Hospital June 18, aged 65, of arteriosclerotic heart disease.

Dichter, Irving Samuel ⊕ Stamford, Conn.; Jefferson Medical College of Philadelphia, 1931; member of the American Academy of General Practice; veteran of World War II; on the staffs of St. Joseph's Hospital and the Stamford Hospital, where he died Aug. 29, aged 51, of cerebral hemorrhage and hypertension.

Dierksheide, Henry William ⊕ Pemberville, Ohio; Eclectic Medical College, Cincinnati, 1918; member of the American Academy of General Practice; president of the Citizens Savings Bank; member of the staff of Riverside Hospital in Toledo, Memorial Hospital in Fremont, and the Wood County Hospital in Bowling Green, where he died Aug. 26, aged 63.

Dora, Alexander Joseph, Hartford, Conn.; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1931; died in St. Francis Hospital Aug. 19, aged 50.

DuBose, James Lafayette ⊕ Wells, Texas; Gate City Medical College, Dallas, 1904; associated with the Nan Travis Memorial Hospital in Jacksonville, where he died Aug. 24, aged 84.

Dutton, Benjamin Blanton, Winchester, Va.; University College of Medicine, Richmond, 1913; member of the Medical Society of Virginia; member of the school board; on the staff of the Winchester Memorial Hospital; died Aug. 22, aged 68, of carcinoma of the lung.

Edmunds, Clarence Harold ⊕ Miami, Fla.; University of Western Ontario Faculty of Medicine, London, Ontario, Canada, 1913; on the staff of the North Shore Hospital; died Aug. 26, aged 68, of heart disease.

Ehrhardt, William ⊕ Westfield, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1900; died in the Methodist Hospital, Houston, Aug. 15, aged 85.

Familton, R. Spencer ⊕ Hoboken, N. J.; New York Homeopathic Medical College and Flower Hospital, New York City, 1917; veteran of World War I; plant physician at Bethlehem Shipyards; died Aug. 29, aged 65.

Forman, Alfred H., Vinton, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1898; an associate member of the American Medical Association; past-president of the Seventh District Medical Society; on the staff of St. Patrick's Hospital, Lake Charles, died Aug. 21, aged 82.

Friedberger, Joseph ⊕ Urbana, Ohio; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1916; on the staff of the Mercy Memorial Hospital, where he died Aug. 8, aged 67, of hepatitis.

Garner, Albert F. ⊕ Grandview, Texas; Missouri Medical College, St. Louis, 1889; died in Arlington Aug. 17, aged 92, of complications following a fractured femur.

Granger, Arthur Stanley ⊕ Los Angeles; Rush Medical College, Chicago, 1909; specialist certified by the American Board of Internal Medicine; served on the faculty of the University of Southern California School of Medicine; fellow of the American College of Physicians; veteran of World War I; on the staff of St. Vincent's Hospital, where he died Aug. 14, aged 76, of injuries received in an automobile accident.

Licht, Louis Frederick, Old Westbury, L. I., N. Y.; Cornell University Medical College, New York City, 1903; also a graduate in pharmacy; fellow of the American College of Surgeons; for many years on the staff of the Mary Immaculate Hospital in Jamaica, N. Y., died in Oquossoc, Maine, Aug. 15, aged 80.

McKinney, Philip Edward ⊕ Mowrystown, Ohio; Eclectic Medical College, Cincinnati, 1911; died July 20, aged 76, of cancer.

Morris, Earl Herbert ⊕ Dayton, Ohio; Medical College of Ohio, Cincinnati, 1903; for 50 years medical examiner for the Railway Express Company; on the staffs of the Miami Valley Hospital and Good Samaritan Hospital, where he died Aug. 5, aged 84, of a coronary occlusion.

Noyes, William Wallace ⊕ Ceresco, Neb.; Lincoln Medical College of Cotner University, 1908; on the emeritus medical staff of Lincoln (Neb.) General Hospital; died Aug. 5, aged 74, of a heart attack.

Pacella, Emilio Robert ⊕ Garden City, N. Y.; Regia Università degli Studi di Bologna Facoltà di Medicina e Chirurgia, Italy, 1937; member of the American Psychiatric Association; died in Southampton Aug. 18, aged 47.

Parker, James Searcy, New Orleans; Tulane University School of Medicine, New Orleans, 1919; member of the Louisiana State Medical Society; received a citation and medal from President Truman during World War II for service in connection with medical examinations of draftees; died Aug. 12, aged 63.

Pearson, George Burton ⊕ Wilmington, Del.; Albany (N. Y.) Medical College, 1897; died Aug. 3, aged 88, of cerebral hemorrhage.

Penke, Madeline ⊕ Staten Island, N. Y.; Cornell University Medical College, New York City, 1930; certified by the National Board of Medical Examiners; specialist certified by the American Board of Pathology; member of the American Society of Clinical Pathologists and the College of American Pathologists; served on the staff of the Staten Island Hospital; died Aug. 23, aged 54.

Pierce, Clarence Dexter ⊕ Batavia, N. Y.; University of Vermont College of Medicine, Burlington, 1923; school physician; served on the staff of the Genesee Memorial Hospital; died in the Kerbs Memorial Hospital, St. Albans, Aug. 2, aged 61, of acute myocardial infarction.

Poleshuck, Rubin ⊕ South Orange, N. J.; University and Bellevue Hospital Medical College, New York City, 1934; an associate, International College of Surgeons; on the staff of the Beth Israel Hospital in Newark; died Aug. 6, aged 50.

Rayman, Elias Allie ⊕ Mount Vernon, N. Y.; University and Bellevue Hospital Medical College, New York City, 1909; member of the American Academy of General Practice; retired police surgeon; formerly surgeon for the New York Central Railroad; served on the staff of the Mount Vernon Hospital, where he died Aug. 6, aged 70, of carcinoma of the liver.

Reinherz, George, Chelsea, Mass.; Tufts College Medical School, Boston, 1908; chairman of the board of health of which he was a member for many years; on the staff of the Chelsea Memorial Hospital; died in Medford Aug. 16, aged 73, of coronary thrombosis.

Reutinger, Ernest Victor, Columbus, Ohio; Ohio Medical University, Columbus, 1906; associated with St. Ann's and St. Anthony hospitals, and the Grant Hospital, where he died Aug. 14, aged 78, of coronary heart disease.

Ross, George Perry ⊕ Auburn, N. Y.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1915; veteran of World War I; consulting surgeon at the Mercy Hospital and the Auburn Memorial Hospital, where he died Aug. 8, aged 64, of coronary thrombosis with infarction.

Ross, Jesse Ellick ⊕ Henderson, Texas; University of Arkansas School of Medicine, Little Rock, 1935; member of the American Academy of General Practice; veteran of World War II; city health officer; served as county health officer; administrator of the Henderson Memorial Hospital; died Aug. 14, aged 52, of coronary thrombosis.

Schoenfeld, Philip, Long Island City, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York City, 1916; an associate member of the American Medical Association; on the staff of the Metropolitan Hospital; a founder, and for many years president of the Boulevard Hospital, where he died Aug. 19, aged 63, of peritonitis and ruptured appendix.

Smith, Homer R. ⊕ Minneapolis; University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1907; on the staff of St. Barnabas Hospital, where he died Aug. 11, aged 74, of a heart attack.

Stewart, Paul Morton, Assistant Surgeon General, U. S. Public Health Service, retired, Washington, D. C.; University of Cincinnati College of Medicine, 1914; service member of the American Medical Association; appointed assistant surgeon general of the Public Health Service in 1914; in 1946 named head of the Coast Guard medical division and served until his retirement in 1952; died Aug. 23, aged 68, of coronary insufficiency.

Streep, Isaac Newton, Brooklyn; Cornell University Medical College, New York City, 1903; died in the Brooklyn Eye and Ear Hospital Aug. 19, aged 81, of esophageal obstruction and tumor of the nasopharynx.

Tallman, John Harold, Mount Vernon, N. Y.; Cornell University Medical College, New York City, 1899; an associate member of the American Medical Association; associated with the Mount Vernon Hospital, where he died Aug. 10, aged 81, of subarachnoid hemorrhage.

Teskey, Stanley ⊕ Bernardsville, N. J.; University of Toronto Faculty of Medicine, Toronto, Ontario, Canada, 1928; past-president and secretary of the Morris County Medical Society; on the staff of the Morristown (N. J.) Memorial Hospital, where he died Aug. 30, aged 58, of adenocarcinoma of the colon.

Thompson, Elmer James, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1905; an associate member of the American Medical Association; served as a member of St. John's Hospital in Pittsburgh and Suburban General Hospital, in Bellevue, where he died Aug. 16, aged 79, of coronary disease.

Tune, Walter Otis, Brookneal, Va.; Medical College of Virginia, Richmond, 1910; formerly member of the town council, and county medical examiner; died in Lynchburg Aug. 20, aged 74, of arteriosclerotic heart disease.

Turner, Irvine Friend Peddie, Titusville, N. J.; Jefferson Medical College of Philadelphia, 1894; an associate member of the American Medical Association; died June 12, aged 83, of coronary occlusion.

Tyson, Thomas D. ⊕ Mebane, N. C.; University College of Medicine, Richmond, 1899; for many years chairman of the school board; on the staffs of the Alamance County and Alamance General hospitals; died in the High Point (N. C.) Memorial Hospital Aug. 17, aged 85, of cerebral thrombosis.

von Tobel, Albert Eugene, Marlin, Texas; Yale University School of Medicine, New Haven, Conn., 1899; died in the Buie-Allen Hospital June 11, aged 81.

Wagner, Joseph Adam, Venice, Calif.; University of Pennsylvania Department of Medicine, Philadelphia, 1903; died in the Veterans Administration Hospital in West Los Angeles June 6, aged 70.

Waldrep, Newnan Cayce ⊕ Tishomingo, Miss.; Kentucky School of Medicine, Louisville, 1901; died in Iuka Aug. 19, aged 80.

Walker, Robert Nichols, Celina, Texas; University of Louisville (Ky.) Medical Department, 1903; died in Dallas Aug. 19, aged 78.

Wallace, Frank Barnett ⊕ Kansas City, Mo.; Washington University School of Medicine, St. Louis, 1917; on the staff of St. Joseph Hospital; veteran of World War I; died Aug. 14, aged 65, of carcinomatosis.

Wallace, James Carroll ⊕ Beaumont, Texas; Howard University College of Medicine, Washington, D. C., 1916; veteran of World War I; on the staffs of the Beaumont Municipal and Hotel Dieu hospitals; died Aug. 6, aged 66, of coronary occlusion.

Warren, Frank Rienzi, South Pasadena, Calif.; Rush Medical College, Chicago, 1896; died May 28, aged 82, of bronchopneumonia, myocarditis, and hypertension.

Weir, William Carrigan, Hamlin, Texas; Vanderbilt University School of Medicine, Nashville, 1913; veteran of World War I; died Aug. 24, aged 74, of coronary thrombosis.

Winter, Alexander King, New Rochelle, N. Y.; Columbia University College of Physicians and Surgeons, New York City, 1892; died June 21, aged 88, of heart disease.

Womack, Edgar L. ⊕ Winchester, Tenn.; University of Tennessee Medical Department, Nashville, 1902; died in the Coffee County Hospital July 1, aged 86, of prostatitis and heart disease.

Young, William Clement ⊕ Chiefland, Fla.; University of Georgia Medical Department, Augusta, 1911; died Aug. 18, aged 82, of carcinoma of the stomach.

Youngblood, Daniel Joel Raymond, Breckenridge, Texas; Atlanta College of Physicians and Surgeons, 1904; died in Fort Worth Aug. 8, aged 86, of arteriosclerosis.

Zaydon, John Paul ⊕ Scranton, Pa.; St. Louis University School of Medicine, 1935; certified by the National Board of Medical Examiners; veteran of World War II; interned at Scranton State Hospital; killed Aug. 23, aged 49, in an automobile accident.

Zingher, Joseph Mordicae ⊕ Rushville, Ill.; Chicago Medical School, 1949; member of the American Academy of General Practice; certified by the National Board of Medical Examiners; resident in the department of anesthesiology, Lakeside Hospital in Cleveland, where he died Aug. 18, aged 37, of coronary thrombosis.

FOREIGN LETTERS

CANADA

Placental Transmission of Poliomyelitic Antibodies.—Can the newborn infant be protected by passive immunization of the pregnant mother? This question is intimately related to the following two others: 1. When and in what quantity are maternal antibodies transferred through the placental barrier? 2. What is the life span of each transferred antibody? Strean and co-workers (*Canad. M. A. J.* 77:315 [Aug. 15] 1957) studied these questions in the case of poliomyelitis antibodies by estimating the titers of neutralizing antibodies in pregnant women and their offspring, with and without maternal vaccination against poliomyelitis during the pregnancy. They show that vaccination with the Salk vaccine during pregnancy has no apparent deleterious effect on the pregnancy and that pregnant women elaborate neutralizing antibodies just as well as nonpregnant women. The maternal antibodies are transferred through the placenta whether the titer is high or low in the mother's serum. All types of antibody are equally well transferred, and there is no significant quantitative relation between the level of fetal antibodies transferred and the level of maternal circulating antibodies. Nevertheless, in certain cases, there was a parallel between the ratio of maternal to fetal gamma globulin levels and the ratio of maternal to fetal antibody titers. This finding suggests the application of routine electrophoretic testing of maternal and fetal blood to detect cases of hypogammaglobulinemia and consequent lowering of resistance to infection.

The level of neutralizing antibodies falls gradually in the serum of the neonate and follows an exponential curve as with metabolite excretion; hence the antibodies are likely to be excreted as exogenous gamma globulin. The half-life of neutralizing antibodies in neonatal blood is 50 to 55 days, but a significant level was still detectable in three of six children as late as 7 to 11 months after birth.

Blood Coagulation in Alimentary Lipemia.—The link between lipids and in vitro changes in the blood clotting mechanism may be related to thrombus formation and atheroma. Mustard (*Canad. M. A. J.* 77:308, 1957) investigated these relationships by studying the clotting mechanism during alimentary lipemia in 24 men given meals containing 74 Gm. of fat and then repeating the experiment in nine subjects after four to six days of bishydroxycoumarin therapy. In the presence of lipemia, most subjects showed changes in the factors concerned with the first stage of thromboplastin formation. Thus, blood clotting was accelerated, the platelet count lowered, antihemophilic globulin activity decreased, and Christmas factor activity increased. In seven of nine subjects given anticoagulants for four to six days, the acceleration of clotting associated with alimentary lipemia no longer occurred, and there were no obvious changes in platelet count, antihemophilic globulin activity, or Christmas factor activity. In the other two subjects, pushing anticoagulant therapy somewhat further brought them into line with the other seven. These two had had a significantly high Christmas factor activity, and it seems that the activity of this factor must be greatly reduced to achieve the anticoagulant effect. If atheroma is due to deposition of material on the intima in the first place, these findings may be of some clinical significance.

Underwriting Canadian Health.—A study entitled "Underwriting Canadian Health" has been made by Dr. William Lougheed, at the request of the Canadian Life Insurance Officers Association. This report on government welfare spending seen purely from the financial angle shows how much health care the Canadian nation can afford to finance through its government in relation to other ways of using the money. To achieve welfare you must first have wealth. The sequence cannot be reversed without disaster. Dr. Lougheed calculates that if government welfare spending and Canada's gross national production continue mounting at their present rates, welfare spending will amount to five times the present figure and to 45% of total government outlays by 1980. If this process continues unchecked, Canada will find itself with a "poor" economy of the British type. Hospital insurance and other welfare programs are likely to weaken further the developmental potential of the poorer provinces, and later the wealthier ones will be involved. Hence, some form of effective cost control must be built into any scheme for financing health services on a large scale. As an alternative to the present scheme, some type of insurance against medical catastrophe may be the answer to the nation's needs.

Poliomyelitis Vaccination.—When Canada began its poliomyelitis vaccination program in April, 1955, most provinces selected the early primary-school group for priority, in view of the limited amount of

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The items in these letters are contributed by regular correspondents in the various foreign countries.

vaccine available. The program was later extended to preschool and older school children, and, by the beginning of the poliomyelitis season in 1958, all the children, pregnant women, and some occupational groups at hazard will have been vaccinated. Now that more vaccine is available, the future extension of the program requires thought. Lossing (*Canad. J. Pub. Health* 48:276, 1957) analyzed the figures for age of incidence of paralytic poliomyelitis in Canada, from 1952 on, as a guide to future application. He shows that, in the postvaccination years, 1955 and 1956, the peak distribution of paralytic cases shifted from the 5 to 9 year age group to the preschool group. The risk to adults was, however, great, for 28 to 36% of all cases occurred in persons aged 20 and over and 11 to 16% at age 30 and over. in 1956, the risk of paralytic poliomyelitis was as great in persons 30 to 39 years of age as at 15 to 19. Figures also show that paralytic poliomyelitis is particularly lethal in the very young, less so in older children, and increasingly deadly in adult years. Vaccination should, therefore, be begun at an early age and extended to adults up to 40 years old, particularly the parents of preschool and school-age children.

Anaerobic Infections in Humans.—Potvin and Morin (*Canad. J. Pub. Health* 48:317, 1957) drew attention to the ease with which the presence of certain anaerobes may be overlooked in human infections. They referred particularly to certain nonsporulating endogenous rods and cocci of the genera Streptococcus, Ramibacterium, and Spherophorus. They systematically collected pus over a period of three years from various hospitals in Quebec and used samples for anaerobic culture. They isolated anaerobes from 35 patients. In 19 of these the infection was only with one or more species of anaerobe (including anaerobic Streptococci in eight patients), while in 16 the anaerobes were associated with aerobes—Streptococcus pyogenes, enterococcus, and Proteus vulgaris. The authors suggest that attempts be made elsewhere to isolate these micro-organisms, especially in infections of the ear, throat, intestinal tract, and genitals, the natural habitat of these anaerobes. It is possible, for example, that a number of focal streptococcic infections are originally anaerobic and that examination of pus early in the infection would reveal pure anaerobic flora.

Public Health Personnel.—New recommendations for basic salary scales and qualifications for all classes of public health personnel are contained in the latest survey made by the Canadian Public Health Association at the request of the Dominion Council of Health, advisory body to the Department of National Health and Welfare. This is the fourth survey made since World War II, and it discloses some improvement in conditions but insufficient to make a career in public health attractive in comparison with that in other fields. There is a continued shortage of physicians trained in public health and a consequent trend toward enlargement of health unit areas. Salary ranges offered to physicians are often still too narrow. It seems that agencies have been unable to obtain enough nurses with public health qualifications, since of the total of 2,675 nurses in public health work 40% are not so qualified; this implies a dangerous lowering of standards. The situation as regards engineers has improved, but salaries are still not competitive with those of industry. The need for full-time dentists in public health agencies is as acute as ever, and the situation as regards recruitment and maintenance of laboratory staff remains serious. Laboratory work has become increasingly specialized and calls for more highly trained personnel to assume more responsibility. Such persons cannot be readily recruited at present salary levels. Salaries for veterinarians, nutritionists, and sanitary inspectors are too low. There is a shortage of health educators, and those available are being trained in the United States rather than in Canada.

Seven Cases of Viral Meningitis in One Family.—Viral meningitis distinct from poliomyelitis has been recognized in Ontario. The latest report (*Canad. M. A. J.* 77:439, 1957) is of an unusual outbreak in an isolated community in Nova Scotia, where seven members of a family were attacked and viruses were isolated during the illness. Symptoms and signs were those of meningitis, and two patients had a bright scarlatiniform rash. Four strains of an agent cytopathogenic for monkey kidney cells, but not HeLa or human amnion cells, were isolated from the stools of three patients and the spinal fluid of one. The virus, placed in the Echo 9 virus category, caused paralysis in infant mice on intracerebral or intraperitoneal inoculation. Serums obtained late in the disease showed neutralization of the virus. The origin of the outbreak is a mystery.

Evaluation of Analgesics.—The difficulty of evaluating the analgesic quality of drugs experimentally has long been recognized. Foulks and Daniel (*Canad. J. Biochem. & Physiol.* 35:455, 1957) reveal the confusion associated with experimental methods in their account of controlled studies of aspirin, codeine, and meperidine in which the effects of these agents were observed on medical students. The rise in pain threshold induced by drugs was studied by two devices, leg muscle compression by sphygmomanometer cuff and compression of tissues overlying the frontal bone. Sixty untrained and three trained subjects were used, and the results proved completely useless for assessment of analgesic values. The following coefficients of variation were obtained: (1) subject to subject, 80%; (2) day to day, 20%; and (3) moment to moment, 10%. Threshold elevations produced by analgesics were small and usually not significantly reater than those obtained with placebos. Most the subjects were inconsistent in their response to acebos so that elimination of placebo reactors ould have meant elimination of most of the group. raining of subjects did not enhance their ability distinguish between agents. The magnitude of atistically significant differences was too small to ermit any general conclusions as to the relative otency of various analgesic agents or of different oses of the same agent. Results bore no obvious lation to clinical efficacy.

ibration Sense in the Aged.—Such authorities as ir Russell Brain and Wechsler have fostered the lea that vibration sense tends to be impaired in the lderly. Himel and Macdonald (*Canad. M. A. J.* 7:459, 1957), as a result of their studies, refute this atement. Since 1950 they have examined vibration nse in 1,200 patients aged from 17 to 90, and they oted that 98% of those aged 60 to 69 years, 91.5% f those 70 to 79 years, and 77% over 80 years had n intact vibration sense. Analysis of the 20 cases f impaired vibration sense suggested that two facors are responsible for the impairment—moderate eripheral vascular disease and the presence of an nemia, due to either iron deficiency or normohromic (there were no cases of pernicious anemia).

NDIA

Vitamin D_2 in Tuberculosis.—B. K. Ghosh (*J. Indian M. A.* 29:3 [Aug. 1] 1957) studied the effect of vitamin D in 23 patients with tuberculosis to find out whether the vitamin has any tuberculostatic action omparable to that of streptomycin, isoniazid, and minosalicylic acid. Three patients had only pulmonary tuberculosis, 15 had only lymph node involvement, 1 had involvement of lungs and bones, nd 4 had involvement of lung and lymph nodes. he study was continued for nine months and the ffect of the vitamin on the serum calcium level was etermined. The drug used was a pure form of alciferol (vitamin D_2), and 600,000 I. U. in oil was njected intramuscularly in adults once a week for our weeks and then once every two weeks. A proportionately smaller dose was used for children.

All the eight patients with involvement of the lungs had bilateral disease, five being in an advanced and three in a moderately advanced stage. n these patients, no exacerbation or spread of the lisease was seen during the trial period, but a slight meliorating effect was seen. Hemoptysis occurred only three times. A marked beneficial effect was seen in patients with lymph node involvement. In about 64% of the patients, the lymph nodes showed reduction in size to less than half, and in another 31% they regressed definitely but not so remarkably. Three patients who had draining sinuses were cured within a reasonable time. No toxic manifestations were encountered with the dosage used. In one child of 4 years, weekly injections of 600,000 I. U. did not produce any untoward effects. No hypercalcemia was noticed during the period of study. Estimations of blood calcium were made at different intervals after administration of calciferol when the greatest rise was 3.3 mg. per 100 cc. in one patient only, the mean rise in the 44 readings made being 1.3 mg. per 100 cc. No calcium was given during this period. The action of vitamin D in tuberculosis is still undetermined, but it has a definitely beneficial effect in lymph node and skin tuberculosis even when other antituberculosis drugs are not being given.

Riboflavin Metabolism During Menstrual Cycle.—B. C. Bose and co-workers (*J. Indian M. A.* 29:3 [Aug. 1] 1957) reported that earlier experiments had shown that 0.8 mg. of riboflavin per day is the minimum requirement for normal adults. Riboflavin requirements have been known to vary with a number of physiological factors. It was therefore thought likely that during menstruation the metabolism of riboflavin, which is connected with the growth and metabolism of tissues, might be interfered with. A group of nurses was selected and kept on a standard diet. A 2-mg. test dose of riboflavin was given two days before the probable date of the menstrual period and repeated on the second day of the period. Samples of urine were collected for estimation of riboflavin excretion before and after the administration of the test dose. It was found that basal riboflavin excretion is increased during the menstrual period. Percentage excretion of the test dose increases gradually from the premenstrual to the postmenstrual period. Certain toxic substances produced during menstruation inhibit fermentation of yeast. The sluggishness produced in women during menstruation may be due to the inhibition of the flavoprotein enzymes, thereby affecting the requirements of riboflavin.

Cardiac Surgery.—R. H. Betts and co-workers (*Indian J. Surg.* 19:3 [June] 1957) reviewed their experience with some of the congenital and acquired cardiovascular abnormalities which have been treated by operation. Twenty-five patients with patent ductus arteriosus were so treated and, of these, six died. One patient with coarctation of the aorta showed a moderate fall in blood pressure in the arm after operation, but it was too soon to evaluate the result. Among the cyanotic group of patients with congenital heart lesions, 29 with tetralogy of Fallot (with 4 deaths) and one with tricuspid atresia were operated on using Blalock's or Pott's anastomosis. One patient with pure pulmonary stenosis was treated by transventricular valvotomy. Of those patients with acquired lesions, 48 with mitral stenosis were treated surgically and 8 died; 4 of these were operated on early in the series, and in the rest death was due to either marked preoperative mitral regurgitation or extreme calcification of the valves. One died of auricular tachycardia, although his pericardium had not been opened. In 10 patients pericardial resection was performed (for constrictive pericarditis in 9 and hemopericardium in 1). One patient had a foreign body in the pulmonary artery and another had a vascular ring associated with a tetralogy of Fallot and a right descending aorta.

Hemorrhage into Retina and Vitreous.—B. T. Maskait (*Journal of Postgraduate Medicine* July, 1957) reported a series of six cases of hemorrhage into the retina and vitreous. The disease occurs in young persons. Intraocular hemorrhage occurs suddenly for no obvious reason and produces dimness of vision. It starts in one eye, but the other eye usually becomes involved after a variable interval. The author's patients were men 21 to 30 years of age. There was no history of epistaxis, and only two had constipation. In the original description of the disease, it was described as being frequently but not invariably associated with epistaxis and constipation. Only one patient had roentgenographic evidence of active pulmonary tuberculosis and another had infected tonsils. An intradermal tuberculin test was negative in only one patient. An increased sedimentation rate was noted in the patient with active pulmonary tuberculosis. In three patients both eyes were involved, and in the others only the right eye was affected. All patients had vitreous hemorrhages. The retinal hemorrhages were peripheral in three patients, and in one they were situated near the disk and macula and at the periphery. No exudates were noticed. Four patients recovered good vision but had permanent vitreous opacities. No complications such as detachment of the retina, glaucoma, and iritis were seen, although one patient, when first seen, had had detachment of the retina following five previous attacks of vitreous hemorrhages. All patients were treated with streptomycin and aminosalicylic acid or streptomycin and isoniazid, but only four of these responded well to this treatment. The cause in most of these patients is either tuberculosis or focal infection, and most patients respond well to chemotherapy. The disease is often associated with headache which may be due to a mild meningism, probably tuberculous in origin. This was a prominent feature in three of the patients studied and was severe in one.

Toxemia of Pregnancy.—R. N. Nag (*Journal of the Indian Medical Association*, Aug., 1957) states that edema in patients with toxemia of pregnancy is probably due to an endocrine disorder producing an abnormal water and electrolyte balance. The toxemia can be remedied by controlling the edema. The toxemia is caused by an excess of sodium ions. Greater intake of fluid, diuresis, salt-poor diet, and ion-exchange resins cause sodium depletion and control the edema. Excretion of sodium ions is increased by giving acetazolamide, which in moderate d
is relatively nontoxic. The ion-exchange resins c
vert the salt remaining in a salt-poor diet into
insoluble form and prevent its further absorpti
The ammonium resin increases urinary sodium e
cretion by causing temporary acidosis. The improv
ment obtained by the giving the resin can b
maintained by a salt-restricted diet. In some patien
however, the edema reappears on cessation of th
resin therapy. Some patients object to its bulk an
bad taste; others have diarrhea or constipation. A
other disadvantage of resin therapy is the excreti
of calcium ions along with the sodium ions. Supple
mentary calcium therapy during administration o
the resin is therefore necessary.

UNITED KINGDOM

Milkmen's Orange Drinks.—Concern is being ex
pressed at the increasing extent to which dairym
are selling orange drinks which appear to contai
practically no ascorbic acid (vitamin C). The county
health officer for Northamptonshire reported th
the results of analyses of two bottles of the con
centrated orange juice obtainable under the Na
tional Health Service showed contents of ascorbi
acid of 73 and 70 mg. per fluid ounce. Analyse
of a sample of orange drink and two samples of
"fresh orange drink," as delivered in one-third pin
bottles by dairymen, gave a content of less tha
0.1 mg. per fluid ounce of the vitamin. There is
great temptation to mothers to buy these drink
as they are delivered to them daily by the ma
who brings their milk. His suggestion is either th
ascorbic acid should be added to bring the concen
tration up to a reasonable level or that these drink
be clearly labeled as not containing it.

Influenza Vaccine.—The government proposes t
buy enough Asian influenza vaccine to offer vac
cination to physicians, nurses, and others who ar
especially exposed to infection and on whom an
epidemic places an exceptionally heavy burd
such as general practitioners, hospital staffs, an
employees of local health departments who car
for the sick in their homes. All the vaccine needed
for this purpose will be obtainable in this country
Although it is highly infectious, Asian influenza i
milder than the ordinary type of influenza to which
we are accustomed. According to present evidence
there is no necessity for general vaccination against
so mild a disease. According to past experience th
protection given by vaccines of this type does no
usually exceed 30 to 40%. A possible explanatio
of this low incidence of protection may be th
inactivated influenza vaccines may, in fact, b
unable to prevent influenza to any greater extent
but it is also likely that the low attack rate ex
perienced in recent epidemics vitiated clinical
assessment. This latter view is supported by the
excellent results obtained by the use of a suitable
virus A vaccine in a sharp outbreak in a boardi

school in 1956 and also by the fact that the difference in clinical influenza attack rates between the various inoculated persons and the controls month by month was greatest during the period in 1956 when virus A influenza was proved to be prevalent by laboratory tests.

A vaccine made from Asian virus has been prepared by methods similar to those used in making other influenza vaccines at the Wright-Fleming Institute. Serologic trials have shown that antibody formation is stimulated by this vaccine, and a clinical trial of the vaccine has been instituted. It is hoped that the inoculation of some 8,000 volunteers will be completed by the end of October and that statistically significant figures will be available by spring.

Glycosuria Test Not Available to Diabetics.—Two new tests are available for detecting glucose in urine. They depend on the oxidation of glucose by atmospheric oxygen in the presence of glucose oxidase to gluconic acid and hydrogen peroxide, which reacts with toluidine blue O in the presence of a peroxidase to give a blue oxidation product. This type of test distinguishes glucose from other forms of sugar, and a testing set is available commercially. One manufacturer claims that the test is roughly quantitative if the color produced is compared with a standard chart of colors. The testing set is not obtainable free on prescription by diabetics under the National Health Service, although other urine testing outfits are, because the enzyme test is not strictly quantitative. It is unsuitable for use by diabetics and is of no more value to the physician than the copper sulfate test. The ministry considers that the test should be limited to ascertaining whether a reducing substance in the urine is glucose or not, as in the screening of suspected diabetics and patients in antenatal clinics, where urines often contain lactose and therefore give a positive copper sulfate reduction test.

Homosexuality and Prostitution.—In April, 1954, the home secretary appointed a committee to consider the law and practice relating to homosexual offenses, the treatment of persons convicted of such offenses by the courts, and the law and practice relating to prostitution and solicitation for immoral purposes. In its report the committee (with one dissentient) recommends that homosexual behavior between consenting adults in private should no longer be a criminal offense, that questions relating to consent and in private be decided by the same criteria as apply in the case of heterosexual acts between adults and that the age of adulthood for the purposes of the proposed change in the law be fixed at 21. In coming to these conclusions the committee states that it has considered the degree to which the criminal law should concern itself with sexual behavior and believes that it is not the function of the law to intervene in the private lives of citizens nor to seek to enforce any particular pattern of behavior except insofar as this may be necessary to preserve public order and decency, to protect the citizen from what is offensive or injurious, and to provide sufficient safeguards against the exploitation of others, particularly those who are specially vulnerable. The committee recommends that the law relating to living on immoral earnings be applied to the earnings of male as well as female prostitutes and that the law relating to brothels should apply to premises used for homosexual practices. So far as treatment is concerned, the committee is not in favor of castration but recommends that the present ban on the use of estrogens in prisons be removed in those cases in which the prisoner desires it and the medical officer considers that it would be beneficial. The committee recommends research into the cause of homosexuality and the effects of various forms of treatment. It also recommends educative measures for medical students, clergy, and probation officers; restricted press reporting; and more care in the selection of teachers, youth leaders, and others in similar positions of trust.

In the case of prostitution, the committee recommends that the maximum penalties for street offenses be increased and that a system of progressively higher penalties for repeated offenses be introduced. The present maximum is $5.60 for the first or any subsequent offense. The committee recommends that the maximum penalty for a first offense should be a fine of $28; for a second offense, a fine of $70; and for a third or subsequent offense, three months' imprisonment. A further recommendation is that the law relating to street offenses be reformulated so as to eliminate the requirement to establish annoyance, as is the case at present. The committee rejects licensed brothels as an alternative to the present state of affairs.

Halothane, a New Anesthetic.—Halothane (fluothane) a derivative of ethane, in which three hydrogen atoms are replaced by fluorine, a fourth by bromine, and a fifth by chlorine, was introduced as an inhalation anesthetic. The Medical Research Council's Committee on Non-explosive Anesthetic Agents reported on the pharmacological and clinical evaluation of the compound (*Brit. M. J.* 2:479, 1957). It was hoped that it would be as safe as ether and devoid of all risk of explosion under working conditions. This has not been achieved, but the compound does possess some useful properties. The pharmacological investigations reveal that, like chloroform, halothane has a specific action on the heart, depressing myocardial activity and reducing cardiac output. Its activity in this respect is about 70% that of chloroform. It produces a fall in blood pressure that is not due primarily to an autonomic ganglion block but probably due to a direct action on the vasomotor center. At the neuromuscular junction, the drug produces some blocking effect, although this is not comparable to that of the muscle relaxants in common use. The drug can, however, potentiate the effect of hexamethonium and tubocurarine chloride, although it antagonizes the neuromuscular block produced by succinylcholine (Suxamethonium) chloride.

The clinical investigations were carried out by a team including Prof. W. Mushin and Dr. G. Organe. Pharmacological and clinical experience with halothane are in agreement. Hypotension is produced in both animals and man, that in man being marked by the retention of a warm pink skin and modest reduction in bleeding during surgical operations. Bradycardia may be noteworthy and is abolished by atropine. In man, the ganglion block of drugs such as tubocurarine or hexamethonium is potentiated so that hypotension may follow the use of these neuromuscular blocking agents during halothane anesthesia. If this is not appreciated, overventilation or slight postural change may produce a severe and unexpected fall of blood pressure. In 25% of the patients, the systolic blood pressure fell below 80 mm. Hg. Halothane also depresses respiration even in the early stages of induction of anesthesia, and cyanosis may occur if patients are not adequately ventilated. Recovery from halothane anesthesia is not as rapid as was suggested by earlier reports, and the incidence of postoperative vomiting appears to be no less than with other anesthetics. Further information about the distribution and elimination of halothane is needed.

It is a relatively safe and pleasant anesthetic agent, providing a flexible and effective anesthesia, without the danger of explosion. It is, however, not as pleasant as cyclopropane and not as safe as ether. The drug should not be given by untrained personnel, as it depresses respiration and may even arrest it. Its use in a closed circuit is not without risk, because it is impossible to control the concentration of inspired vapor. So great is its potency that it is essential to use a specially designed apparatus to deliver a known concentration of the vapor. Halothane is a strong respiratory depressant, and morphine, if given at all for premedication, should be administered in small doses. There are certain patients for whom cyclopropane or ether is preferable. The main use for halothane may be in those operations in which bleeding is troublesome and yet only a light plane of anesthesia is required, as in operations on the ear, nose, and throat.

Cleaning Hospital Blankets.—Hospital blankets, unless specially laundered, are bacteriologically contaminated and a source of infection. Frisby (*Brit. M. J.* 2:506, 1957), who examined blankets used by infected patients, found that a whole blanket harbored from 40 to 80 million organisms. He considered that the woolen blanket is a potent source of infection in hospitals. To make it suitable for use, it needs to be specially laundered with special detergents and in machines that are not available in many hospital laundries. For this reason, Frisby recommends the use of terylene blankets, which are boiled like sheets. This greatly reduces the bacterial count and entirely eliminates Micrococcus pyogenes var. aureus, which was found on all woolen blankets and which was penicillin-resistant. Terylene blankets produce little lint and stand up well to an average of 14 boilings. After boiling, rinsing in a preparation known as cirrasol helps to maintain a low bacterial count. After use by each patient, all blankets should be boiled. This is desirable esthetically and bacteriologically. The hospital Micrococcus must be eliminated before it reaches the patient, and one of the points of attack is the hospital blanket.

Comparison of British and U. S. Medical Schools.—Three London hospital medical students who spent several months studying in three American medical schools have compared the work of medical students in the two countries (*Lancet* 2:407, 1957). The medical schools visited were those of Western Reserve University, the University of Virginia, and Columbia University. The general view of the British students is that the American medical student has a greater degree of responsibility towards his patient than does his British counterpart. The teaching staff of American schools look on him as a member of a clinical team. There are more teachers per student in the United States, and the organization of American medicine enables them to devote more time to teaching. There is an attitude of friendly equality between staff and students in the United States. The student's opinion on diagnosis and treatment is always asked without the "grilling" that is common in Great Britain. A notable feature of American teaching is the staff conference at which difficulties of diagnosis and management are presented, often by the student, to a large audience of specialists. Students enter the discussion and often have the stimulating experience of hearing their chiefs criticizing one another. This is almost unknown in Great Britain. A student in the United States may also stop his chief anywhere in the hospital and discuss a case with him—another rarity on the other side of the Atlantic.

Relationship between teacher and student in the United States is very free and easy, much as it is in the older universities of Oxford and Cambridge. One of the main incentives to work is enthusiasm for and a sense of participation in medicine, and the worst type of incentive, the fear of examinations, has largely been removed in the American medical schools, where, once the student has reached his final year, graduation is almost certain, because the unfit have been weeded out long before then. At Western Reserve, there is no university final examination as in Britain, although the state or national licensing examinations must be passed. The failure rate is stated to be 2 to 3%. At Virginia and Columbia, there are a number of intermediary examinations throughout the medical course. The only fear is that of getting a poor grade. There is no "cramming" just before examinations as happens in British schools. American students who have studied in Britain are very critical of this. Yet the view of the visiting British students is that the American medical student works much harder, starting at 8 a. m. with lectures or on the wards and finishing when there is nothing more to do in the hospital, which is late at night. Many American students work for pay in the hospitals during their vacations or at night. Few British students work for pay, except possibly in their long vacations, and then it is at nonmedical work. In the United States there are fewer scholarships and grants than in Britain, where the state maintains many students.

In the United States the medical student is virtually treated as a physician, not as a student. He interviews and examines patients alone, and they are usually unaware that he is not yet a graduate. He then discusses the case with a member of the staff. This gives the American student a sense of responsibility that the British student does not possess. In the home care programs of Boston University and Tufts Medical College, the students engage in a limited form of medical practice—caring for the sick in some of the poor areas of the city. If in doubt or difficulty, they can call the hospital for advice.

One further striking difference between the two countries is the attitude towards research and research ideas. In Britain, owing to the exigencies of the examination system, the student has little time for these. The American student, on the other hand, may engage in some research as a member of a team in his undergraduate days, or he may take a research post in his vacations or spare time. Western Reserve includes a compulsory period of research in its curriculum and a thesis at the end of it. The American student, instead of holding a series of compulsory appointments as does the British student, is allowed to choose the particular branches of medicine he would like to study in rather more detail during the latter part of his training, and he spends up to four months doing this. The general opinion of the British medical students is that some of the American teaching methods could be introduced with advantage into British medical schools.

Tuberculosis Statistics.—In Tuberculosis Statistics for England and Wales, 1938-1955 (Her Majesty's Stationery Office, 1957), W. Logan and B. Benjamin stated that the number of persons suffering from tuberculosis is increasing. It is only morbidity and mortality that are declining. In Great Britain, 26 million person-days a year are lost to industry through tuberculosis. The death rate, however, in both men and women has fallen. Between ages 20 to 24, it is only one-sixteenth and between 47 and 54 less than one-third of what it was 10 years ago. This spectacular fall began with the introduction of streptomycin. Reporting rates have fallen also. Twenty years ago this figure was 92 per 100,000 population, and it rose to a peak at the end of the war when it was 103. It remained at this level until the introduction of chemotherapy five years later. Today it is 76 per 100,000, the lowest recorded.

The number of cases treated at chest clinics and hospitals, however, is increasing at the rate of 11,000 a year. By the end of 1955, there were over 300,000 patients under treatment or observation. Mass radiographic data would suggest that there are about 75,000 unsuspected cases in the country, or about 1 in 600 of the population. Logan and Benjamin estimate that the total number of persons, known and unknown, suffering from respiratory tuberculosis in England and Wales is 375,000, or about 1 in 110 of the population, and, of these, 45,000, or 12%, are sputum-positive and, hence, form a reservoir of infection. Nonrespiratory tuberculosis accounts for another 36,000 cases, or just over 9.5% of the total number of tuberculous persons. The problem of the control of tuberculosis is still a large one, and any complacency as a result of the dramatic decline in mortality and the progressive reduction in reporting is not justified.

Medical Student Selection.—Before 1939, a medical career was, in the main, open only to those whose parents could afford it. Today the social pattern has changed and prospective physicians come from another social group. The prospective medical student is sorted out at the age of 10 or 11, when he sits for an entrance examination for a place in a grammar school. If he fails, his chances of going to the university later are slender, so that "late starters" who might make very good physicians have slim chances of entering a profession. Student selection operates further at age 17 to 18, when those who can pass what is known as the General Certificate of Education at advanced level and whose parents' income is below $5,600 are the most likely to be selected for entry to the medical schools. When the parents' income exceeds $5,600, no state grants or scholarships are obtainable, and parents must bear the entire cost of a long and expensive education. In Great Britain, parents with more than one child to educate can rarely pay for more than one child to be a physician, whatever their income. Thus the social group from which most physicians came before the war is no longer supplying the profession with recruits. Most medical students now come from the lower income groups, particularly outside London. Medicine has thus become more of a means of earning a living rather than a vocation as it used to be. Parents think more of the prospective financial rewards from medicine for their children. This economic selection may produce physicians trained to pass examinations but with less sense of vocation and interest in people than formerly.

CORRESPONDENCE

FOLLICULAR LYMPHOBLASTOMA OF THE SPLEEN

To the Editor:—On Sept. 21, 1935, in THE JOURNAL (105:932-934), we reported a case diagnosed then as giant follicular malignant hyperplasia of the lymph follicles of the spleen, now better designated as follicular lymphoblastoma involving spleen. In this case the disease as first observed was confined to the spleen and several adjacent lymph nodes in the gastrosplenic omentum. There was no appreciable general lymph node involvement. A splenectomy was performed. The patient remained under our care until her death April 28, 1954, 27 years after the disease was recognized and diagnosed. As far as we know, this is the longest period of survival in this particular type of lymphoblastoma, the giant follicular type. Usually death occurs within 10 years. Unfortunately an autopsy was not obtained, but the clinical and laboratory findings suggested that the death was due to lymphosarcoma which had ultimately developed from the follicular lymphoblastoma. From the time of our report in 1935, the patient maintained normal good health without incident until March, 1951, when she noticed several enlarged lymph nodes in both sides of her neck in the supraclavicular fossae, reported on biopsy as small cell lymphosarcoma. With x-ray treatment these lymph nodes, and one in the right axilla, practically disappeared. In January, 1952, she developed an enlargement of preauricular lymph nodes bilaterally, and one small node in the left axilla. These were excised. The pathologist's report was as before, lymphosarcoma. In March, 1953, several nodes appeared bilaterally superficial to the sternomastoid muscle in the midcervical region and disappeared with x-ray treatment. A roentgenogram of her chest disclosed a nodular infiltration of the upper lobe in the right lung from the apex to the level of the third rib, suggesting tuberculosis rather than tumor. There were slight dulness to percussion and a few subcrepitant rales. There was no cough. Sputum, practically nil, was negative for tubercle bacilli. Skin tuberculin test was negative. Temperature was normal. She felt well until February, 1954, when she reported being tired. She had lost 5 lb. (2.3 kg.) in weight, to 121 lb. (54.9 kg.). There was still no cough. There was no lymph glandular enlargement. Hemoglobin level was 75%, which represented a loss of about 8% from 1950 when her blood cell count showed 4 million red blood cells per cubic millimeter, 13,400 white blood cells, hemoglobin 83%, polymorphonuclear cells 57%, lymphocytes 43%. Roentgenograms showed precisely the same appearance as in the film of March, 1953. The radiologist's diagnosis was again nodular infiltration due to tuberculosis. Scant sputum was still negative for tuberculosis or tumor cells. On March 13, 1954, her weight was 114 lb. (51.7 kg.), hemoglobin 70%, temperature 100.2 F (37.9 C). She felt weaker. Aside from slight dyspnea at times, no new symptoms developed. Appetite was good; bowels moved regularly. Tonics and barbiturates were administered. On the morning of her death, April 28, 1954, she seemed as well as usual; she was waiting in bed for her breakfast when she suddenly became comatose and died within an hour. Autopsy permission was not granted, so the immediate cause of her death and the nature of the pulmonary lesion was not established.

In follicular lymphoblastoma lymphoid tissue including the spleen is sensitive to radiotherapy, and more so than in any other form of lymphoma. This is particularly true in the benign phase, but less so in the later malignant phase, since there is a tendency to gradual decrease in sensitivity. About 4% of cases are resistant. X-ray treatment slows the progress of the disease and prolongs life. There is no reason to believe that splenectomy is helpful, or is indicated as a therapeutic measure. In our case, a large spleen was removed as a diagnostic procedure and to relieve mechanical intra-abdominal pressure. For recent reviews of follicular lymphoblastoma, the reader is referred to the papers of Rappaport and associates in *Cancer* (9:792-821 [July-Aug.] 1956) and Wetherley-Mein and associates in *Quarterly Journal of Medicine* (21:327-351 [July] 1952).

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LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Privileged Communications: Presence of Third Person as Waiver.—The defendant was charged with criminal negligence in operating an automobile with knowledge that he was subject to epileptic attacks. The trial court overruled a demurrer to the indictment and returned a conviction. An appeal was therefore taken to the court of appeals of New York.

The defendant, with full knowledge of his own history of prior epileptic attacks, was driving his car in Buffalo when he was seized by another attack. His car went out of control and killed or injured six people.

Among the issues raised on appeal was whether or not the physician-patient privilege applied to the testimony of Dr. Wechter. It appeared from the evidence that after the accident the defendant was taken to the Meyer Memorial Hospital by the police. A guard was stationed at the door of the room in which the defendant was placed and the hospital was notified that defendant had been involved in an accident in which a number of persons had been killed and that charges would be preferred against him later. On the evening of that day, Dr. Wechter, a resident physician in the hospital and a member of its staff, went to his room and examined him. While the guard was standing in the doorway so that he could hear anything that was said and see anything that was done, the defendant related to the physician a complete account of his past medical history of epileptic seizures and prior treatments that he had received for that disease. Further tests were performed, a diagnosis of Jacksonian epilepsy made and treatments rendered by various members of the staff. Dr. Wechter testified that he saw the defendant in his professional capacity but the prosecution argued that no physician-patient relationship was created because the doctor saw him at the request of the police department, hence no privilege.

The court of appeals was of the opinion that a physician-patient relationship was created. It then went on to say that the information given by the defendant was necessary for his treatment. Evidence of prior medical history of a disease for which defendant was treated cannot be said to be information unnecessary for treatment. The court of appeals also held that the presence of the guard, who was present at the order of the police department, did not destroy the privilege. The evidence of the doctor should therefore have been disallowed and the judgment of conviction was overruled and a new trial ordered. *People v. Decina, 138 N. E. (2d) 799 (N.Y., 1956).*

Privileged Communications: Right of Examining Physician to Answer Hypothetical Question.—This was an action for damages for personal injuries alleged to have been caused when the plaintiff and the defendant's clerk bumped into each other in the aisle of the defendant's drugstore. From a judgment in favor of the defendant, the plaintiff appealed to the Supreme Court of Minnesota.

The plaintiff contended that as a result of bumping into the defendant he suffered a prolapsed intervertebral disk and other back injuries. During the trial he called two physicians who had treated him over a considerable period of time. Both testified at length concerning such treatment and expressed their opinion as to the causal connection between the alleged negligence of defendant and the plaintiff's physical conditions which they found to exist. According to the testimony of one of these men, a specialist in industrial surgery, the plaintiff, during the time he was being treated by him, was referred to Dr. Jones, a specialist in orthopedic surgery. The plaintiff did not call Dr. Jones as a witness; the defendant called him as an expert witness, however. The plaintiff objected to any testimony by Dr. Jones on the ground that his testimony was privileged under the Minnesota law which provided: "A licensed physician or surgeon shall not, without the consent of the patient, be allowed to disclose any information or any opinion based thereon which he acquired in attending the patient in a professional capacity, and which was necessary to enable him to act in that capacity . . ."

Dr. Jones was permitted to give his opinion, based on a hypothetical question, as to whether or not the plaintiff's condition was the result of the bodily contact between the plaintiff and the defendant's clerk. Prior to submitting the hypothetical question, Dr. Jones was admonished: "Now, doctor, without testifying to anything relating to your examination of Mr. Maetzold in your office, and excluding all of that from your mind, I will ask you some hypothetical questions: . . ." Thereafter followed the question based upon assumed facts taken from the testimony of the witnesses. The doctor's answer was: "In answer to a hypothetical question such as that, that concerns a bump on the side of the hip or thereabouts, and assuming that he didn't have objective findings for some time afterward, including no loss of motion on the back or spasm, with that as the hypothetical story, it would seem to me that it was a rather trivial injury." Thereafter Dr. Jones was questioned at length, both on direct examination and cross-examination, as to his opinion concerning the nature and causes of disk injuries of the type alleged to have been sustained by the plaintiff. The plaintiff claimed that it was error to permit Dr. Jones to give his opinion based on such a hypothetical question.

As far as we have been able to find, said the Supreme Court, the authorities are unanimous in holding that, under statutes similar to ours, an attending physician is not disqualified or precluded from giving expert medical testimony based on a hypothetical question which excludes all knowledge or information gained by the doctor in examining or treating the patient. The statute creating the physician-patient privilege is designed to prevent the doctor from disclosing information of confidential nature communicated to him by the patient or which he acquires in examining or treating the patient. In absence of a statutory disqualification, the doctor is not disqualified from testifying at all. As long as the doctor's opinion is based on facts contained in a hypothetical question which excludes all information obtained in examining or treating the patient, it does not contravene the statutory prohibition. The knowledge the doctor acquired by attendance on the patient might, to some extent, have influenced his answer to the question, but that fact did not render such answer incompetent. It merely affected its weight.

Other contentions of the plaintiff were also overruled and the judgment in favor the defendant was affirmed. *Maetzold v. Walgreen Co., 83 N. W. (2) 233 (Minnesota, 1957).*

Malpractice: Liability of College for Negligence of Senior Student in College-Owned Clinic.—This was an action for damages caused by the alleged negligence of a senior student at the Des Moines College of Osteopathy and Surgery while he was serving in a clinic maintained by the college. From a judgment in favor the plaintiff, the defendant college appealed to the Supreme Court of Iowa.

At the suggestion of a licensed practitioner of osteopathy who was a professor on the faculty of the defendant college, the plaintiff presented himself at the clinic owned and operated by the defendant for a complete physical examination, x-rays, and a series of treatments for his back. He testified that he "was assigned to a student that was to take me around and give me my physical examination." After the x-rays were completed, he was taken to another room for some heat treatment. About 20 minutes later, the student entered the room and started some manipulative therapy. Concerning such treatment, the plaintiff testified: ". . . I'll never know to this day, he seemed to take both hands and give me a punch on my back that hurt severely and I said at the time, 'Don't ever do that again; that hurt. You hurt me.' 'Well I'll fix that,'" and as the student did it a second time plaintiff passed out from "terrific" pain. No one was there except the student, and he undertook to help the plaintiff to his feet, but the plaintiff passed out again and lay on the floor. When he "came to" the student was gone but returned shortly with two men who appeared to be interns or doctors from the hospital. One of these gave him "some kind of tablet," later identified as an aspirin tablet; to help reduce the pain. The plaintiff objected to being taken to the hospital and called a friend. He was carried to his car, taken home, and later removed by ambulance to the Veterans Hospital in Des Moines. Some ten weeks later, when other treatments were ineffective, he was operated upon and found to have a ruptured disk. Several doctors testified that, in their opinion, the manipulation at the Still Clinic probably did precipitate the ruptured disk, and the neurosurgeon who performed the operation was of the opinion that any manipulation could have precipitated the ruptured disk, depending upon how much pressure was exercised and the preexisting condition of the disk prior to that time.

The defendant college contended that, while there may be some competent evidence as to the negligence of the student, his acts at the time were of a professional character and for that the corporation could not be held liable. It argued that negligence is a failure to perform a legal duty, and, under the theory upon which this case was submitted to the jury, the corporation must be shown to owe a legal duty to provide plaintiff through the student, professional care and treatment ordinarily provided by practitioners of osteopathy in and about Des Moines at that time.

It is true, said the Supreme Court, that the plaintiff *did allege and the trial court did submit th issue as to defendant's guilt of negligence in th professional care and treatment of the plaintiff, i that it did not use the ordinary care and treatme of the plaintiff's ailment that was usually and orc narily used and employed by practitioners of oste pathy of the same school. There is* little doub continued the court, but what *students* and inter not yet licensed to practice osteopathy perfor certain administrative or semiprofessional task assigned them by the clinic authorities. In doing so they are servants or employees of the corporation. The court pointed out that the real issue, therefore, was whether, while performing the alleged professional task of administering to the plaintiff a so-called treatment, the student could be found by the jury to be an agent or employee such as to incur liability on the defendant corporation.

The Supreme Court conceded that the relationship of patient and doctor, even when the patient is confined in a hospital, is usually referred to as that of an independent contractor, and under the general rule such services may not be legally furnished by a third party not licensed. Clearly, however, the court continued, there is no such relationship between the students in a college-operated clinic and the clinic patients as is usually found in a doctor-patient situation. These students and interns are not independent contractors in any sense of the word. They are servants of the college or clinic, and the patient who enters such a college a hospital clinic for professional services looks not to the student but to the corporation or institution to provide that degree of care usually exercised by personnel of ordinary skill, ability, and prudence engaged in that school of healing. Although unlicensed, one who acts as a practitioner of a profession through students, interns, or other servants under legal sanctions to do so, assumes duties which if not performed, or not performed properly, may constitute actionable negligence. The operators of the school and clinic are required to and do place over the students supervisors and instructors who are expected to give reasonable supervision and guidance to the students undertaking to perform the acts otherwise known as professional services for any patient who submits himself to the school for clinical practice. In fact, the instructor in charge of the student involved in this case had specifically warned against the use of "corrective force" in treating the plaintiff until a myelogram had been completed. The jury could have found that there was a failure to exercise due care in completing the diagnosis prior to the treatment.

The Supreme Court of Iowa therefore concluded that the defendant college was responsible for the negligence of its senior students working in the college-operated clinic and the judgment for the plaintiff was affirmed. *Christensen v. Des Moines College of Osteopathy and Surgery, 82 N. W. (2d) 741 (Iowa) 1957.*

Libel and Slander: Charges Made to Medical Society Grievance Committee.—This was an action for damages for libel against a former patient of the plaintiff physician. The action was heard by the Supreme Court, trial term, Kings County, New York. The defendant went to the plaintiff surgeon for cosmetic surgery for a scar on her shoulder. She was dissatisfied with the results obtained and wrote a letter to the New York County Medical Society, reading, in part, as follows:

> It was guaranteed to me by the physician, who is the subject of this correspondence, that the scar which is on my left shoulder would disappear, except for a thin and barely visible line, after the performance of the operation. Further, that this healing process would take only about four months. Since the date of the operation, no change whatsoever has taken place, nor has the length or ugliness of the scar in any way diminished.
>
> The consultation which took place on Saturday between Dr...and myself, was both disheartening and, I believe, unethical. Dr.................................. readily admitted to the operation's failure, indicating that the scar would not disappear and that he did not perform a proper operation. When asked by me what he proposed doing to rectify this situation, he suggested another operation at additional cost.

The letter ended with a request for "assistance and guidance."

The plaintiff denied making a guarantee that the scar would be removed. He contended that no scar can be completely eliminated, and, if incised, it must of necessity be substituted by another. He argued that a guarantee of removal and reduction of the scar to that of a thin and barely visible line, knowing that such a result is highly improbable or impossible, would be reprehensible, deceitful, and unethical and that to falsely accuse a surgeon of making such a definite guarantee of recovery is to impugn his integrity and professional standing as a surgeon, amounting to libel per se.

The grievance committee of the medical society said that "The promise of radical cures or boasting of cures of extraordinary skill or success is unethical," but rejected the defendant's complaint on the basis of the plaintiff's assurance that no guarantee or promise of outcome was made by him.

The court pointed out that it was the defendant's qualified privilege to communicate with the society. Having been invited to do so, it was in her own interest to tell of her grievance and to tell it to a body having a common interest and expressly set up to receive and to deal with it. Assuming the defendant's allegations to be correct, she expressed them in a courteous, fair, and reasonable fashion. Being a truthful statement by an interested patient, privileged to make it to those mutually interested and authorized to receive and deal with it, malice may not be implied. The plaintiff's charge of defamation, which he attributes to the letter to the society relative to an alleged guarantee of the length of time for healing and an admission of failure, is, said the court, without merit. Furthermore, the court added, even if these charges be untruthful, they are not in essence statements of a defamatory nature, since erroneous speculation as to time for healing and an occasional failure of an operation does not affect the professional standing or the ethics of a surgeon. Accordingly, the plaintiff's complaint was dismissed. *Kantrowitz v. Candelario, 163 N. Y. S. (2) 297 (New York, 1957).*

Medical Practice Acts: Naturopathy as the Practice of Medicine.—This was the prosecution of a naturopath for engaging in the unlicensed practice of medicine. From a judgment of conviction, the defendant appealed to the Court of Appeals of Maryland.

It was stipulated that the defendant, a naturopath, did not have a license to practice medicine in Maryland and that he had never registered a medical license with the clerk of the circuit court for Baltimore County, where he lives, or with the clerk of the circuit court of Baltimore City, where his office has been. The testimony showed that on six occasions a policewoman, under a fictitious name, visited the defendant's office and that the defendant used the title of doctor and attempted to diagnose and treat her for ailments, some of which she had suggested to him and others of which he said he had discovered. In making his diagnosis, he used what was said to be an electronic machine that would disclose the condition of her muscles, tissues, and nerves and indicate whether her body was deficient in certain necessary vitamins and minerals. The "patient" was told that she had a nutritional anemia deficiency, as well as an enlarged spleen. On two occasions she received an electric diathermy treatment for the spleen condition. The defendant prescribed and sold her vitamins and took a urine specimen for the purpose of analysis. While one of the treatments was going on, a police officer entered the office and made the arrest. The defendant freely admitted that he held himself out as a natural healer, and that he had practiced naturopathy in Baltimore continuously since 1938, and that he was practicing at the office where he was arrested.

The defendant argued that the practice of naturopathy is not the practice of medicine. The Maryland Medical Practice Act defines a practitioner of medicine as any person ". . . Who shall append to his or her name the words or letters 'Dr.,' 'Doctor,' 'M.D.,' or any other title . . . with the intent thereby to imply that he or she is engaged in the art or science of healing, or in the practice of medicine . . . or who shall operate on, profess to heal, prescribe for, or otherwise treat any physical or mental ailment or supposed mental ailment of another. . . ." In a prior decision, the Court of Appeals concluded that the legislature intended that the practice of medicine was to include any practice of the art of healing disease and preserving the health other than those special branches of the art that were expressly excepted. It was noted that the legislature prescribed special regulation for the practice of osteopathy, chiropody, and chiropractic, but that it has made no such provisions for the licensing of naturopaths, despite the fact that bills frequently have been introduced in the legislature to permit and regulate the practice of naturopathy. The fact that no such legislation has been passed, said the court, indicates that the legislature has not intended thus far to permit naturopaths to practice without a license. The legislature has been careful to prevent medical treatment without the protection afforded by some official regulatory board. The court then concluded that in view of the breadth of the language employed by the legislature to define the practice of medicine and its failure to exempt naturopaths from the definition, it was compelled to hold that the Medical Practice Act prohibits a person desiring to engage in the healing art by the practice of naturopathy from doing so without a license from the State Board of Medical Examiners.

Since there was evidence that the defendant used the word "doctor" in such a way as to imply that he was engaged in the art or science of healing, as well as evidence that he diagnosed supposed ailments of the policewoman and prescribed treatment for those ailments, concluded the Court of Appeals, it is clear that the case properly went to the jury. Furthermore, the defendant would seem to have removed any doubt on the question, when asked "Do you treat physical ailments your patients?" he replied: "Yes sir, I do."

Other contentions of the defendant were overruled and the judgment of conviction was firmed. *Hitchcock v. State of Maryland, 131 A 714 (Maryland, 1957).*

MEDICAL FILM REVIEW

NEW FILMS ADDED TO A. M. A. MOTION PICTURE LIBRARY

Even for One: 16 mm., black and white, sound, sho time 28 minutes. Produced in 1957 by Dynamic Films, N York, for the American Medical Association. Procurable loan (no service charge) from Motion Picture Library, A ican Medical Association, 535 N. Dearborn St., Chicago

This film, designed to show the "human side" medicine, is the third in a series of films produc for use by state and local medical societies. T story revolves around a general practitioner in middle-sized town. A crisis develops when a ch is treated for typhoid while other patients wi similar symptoms are treated for food poisoni One mother tries to stir up the entire communi when the doctor refuses to hospitalize her son having typhoid. The doctor convinces this moth and others in the community that he did the rig thing and tells of the importance of the "art" medicine by saying: ". . . when you call me to yo side, you are buying what it has taken me all life and training to learn. . . . You are buying skill, my art, perhaps . . . but most of all my jud ment. . . ." *This film is recommended* for showi to lay groups such as service clubs and pare teacher associations and is also available for on television.

Training the Medical Student: 16 mm., black and wh sound, showing time 29 minutes. Produced in 1957 for Ciba Medical Horizons television series. Procurable on (service charge $1) from Motion Picture Library, Ameri Medical Association, 535 N. Dearborn St., Chicago 10.

This is a technically good kinescope of the tele sion program in the Medical Horizons series. Af an introduction by Don Goddard, narrator, the of a student is presented in brief, dramatic quences, through the four years of medical educ tion at the University of Pennsylvania School Medicine. This interesting, well-planned, and we executed film uses the University of Pennsylva faculty and facilities. It should be a valuable junct to explaining the undergraduate phase modern medical education to high school and co lege students as well as to other groups of laym When so used, as with any film, it should be f lowed by discussion and a question-and-ans period led by a physician.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Shoulder-Hand Syndrome Following Myocardial Infarction with Special Reference to Prognosis. J. Edeiken. Circulation 16:14-19 (July) 1957 [New York].

Steinbrocker observed 3 stages in the evolution of the shoulder-hand syndrome: 1. The first stage lasts from 3 to 6 months. The patient experiences pain, tenderness, and limitation of motion at the shoulder girdle followed by swelling, pain, stiffness, and discoloration of the hands and fingers. 2. The second lasts from 3 to 6 months. The shoulder pain and the hand swelling and discoloration gradually disappear, with stiffness and flexion deformity of the fingers becoming more prominent and manifestations similar to Dupuytren's contracture appearing. 3. The third lasts for months or becomes irreversible and is characterized by progressive atrophic changes in the hands, severe atrophy of the interosseus muscles, and limitation in motion at the metacarpophalangeal and interphalangeal joints. In the present group of 42 patients who developed symptoms of shoulder-hand syndrome after myocardial infarction there were 32 men and 10 women ranging in age from 38 to 73 years. These patients received no therapy other than local heat, analgesics, and a regimen of active use of the affected extremity. The time of onset varied from 2 weeks to 14 months after the myocardial infarction. The majority of patients obtained complete relief of symptoms within 8 months, some 12 others obtaining complete relief within 24 months and 1 patient with a "trigger" area not obtaining relief even after 3 years. Only 5 of the 42 patients ever reached the third stage described by Steinbrocker. No relationship was found to exist between the transmission of the cardiac pain to the shoulder during the acute attack and the development or location of pain of the shoulder-hand syndrome, which occurs in 10 to 15% of the cases of myocardial infarction but does not appear to follow recurrent coronary disease in any set pattern. The severity of the shoulder-hand syndrome was found to be in no way related to the severity, extent, or location of the myocardial injury. The cause of the shoulder-hand syndrome following myocardial infarction is not definitely known. The suggestion that sympathetic fibers are accidentally included in the scar tissue better explains why such a small percentage of people develop the syndrome after coronary occlusion, why it may take weeks or months to develop, and why in some individuals it may occur after one attack but not after another. Others have suggested that the syndrome may develop merely as a result of relative disuse of the shoulder and abnormal tension of the muscles of the shoulder girdle. Only 2 of the 42 patients failed to recover, prognosis generally considered as being poor only in those patients with a "trigger" zone, the sensitivity of which may or may not be attenuated by local procaine or hydrocortisone injections. Patients with coronary occlusion who were instructed to move their arms and shoulders while confined to bed and rest their head on their hands for 15 to 20 minutes 3 or 4 times daily exhibited the severe types of shoulder-hand syndrome less frequently and the "claw-hand" not at all.

Anomalous Connection of Right Pulmonary Veins to Superior Vena Cava with Interatrial Communications: Hemodynamic Data in Eight Cases. H. J. C. Swan, J. W. Kirklin, L. M. Becu and E. H. Wood. Circulation 16:54-66 (July) 1957 [New York].

An anomalous connection of some or all of the veins of the right lung with the superior vena cava, or with the caudal portion of this vessel and the cephalad portion of the right atrium, and an interatrial communication located cephalad to the fossa ovalis near the site of the anomalous connections is considered to be a somewhat rare variant (10% of the cases of atrial septal defect) of interatrial connections. Three anatomic features characterize the anomaly: (1) the defect is above the fossa ovalis and separate from it; (2) no margin of tissue is present superficially between the defect and the superior vena cava and an incomplete one is seen posteriorly; and (3) there is an associated anomalous connection of the right superior and occasionally the inferior pulmonary veins. This report embraces 8 patients considered to have had anomalous connection of some or all of the right pulmonary veins to the caudal portion of the superior vena cava with an associated "high" interatrial communication.

The place of publication of the periodicals appears in brackets preceding each abstract.

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Cardiotomy confirmed the diagnosis made at cardiac catheterization. Successful correction of the anomalies was accomplished in 5 of 6 patients. Pulmonary hypertension associated with a great increase in pulmonary vascular resistance and predominate right-to-left shunt contraindicated surgery in the remaining 2 patients.

The basic hemodynamic pattern and symptomatology is similar to that in the "usual" type atrial septal defect, no clinical feature having been recognized that might serve to further differentiate this condition. Differentiation was accomplished by (1) the roentgenographic position of the catheter in the right pulmonary vein, the point at which the catheter passed into the lung field being above the bulge of the atrium, (2) demonstration of an abnormally high or equally great oxygen saturation of the blood in the superior vena cava at the junction of the right atrium, (3) the presence of a small right-to-left shunt from the superior vena cava and the absence of such a shunt from the inferior vena cava, and (4) the demonstration of similar drainage of blood from the right superior pulmonary vein and superior vena cava by the similarity of indicator-dilution curves.

Tricuspid Stenosis. J. F. Pantridge and R. J. Marshall. Lancet 1:1319-1322 (June 29) 1957 [London].

Tricuspid stenosis is not infrequently found at autopsy in rheumatic heart disease. It is almost always associated with mitral stenosis and often also with aortic valve lesions. The presence of mitral stenosis tends to mask some of the signs and symptoms of the tricuspid valve lesions, and the diagnosis may thus be overlooked. Since 1953, reports of tricuspid valvotomy have been published, and in suitably selected patients the operation is helpful. Tight tricuspid stenosis is extremely disabling. Of 400 patients selected for mitral valvotomy in the Royal Victoria Hospital, Belfast, 2 have also had tricuspid valvotomy; a third patient has a moderately severe tricuspid stenosis, but operation is not yet indicated. The authors present these 3 patients and discuss the clinical, hemodynamic, and surgical aspects of the condition.

When tricuspid stenosis is suspected on clinical examination, confirmatory evidence may be obtained from fluoroscopy, electrocardiography, and cardiac catheterization. Fluoroscopy reveals enlargement of the right atrium. Enlargement of the left atrium and of the right ventricle is due to the associated mitral lesion, and when the tricuspid stenosis is extreme, as in the first of the 3 reported patients, these changes may be disproportionately slight for the degree of mitral obstruction present. The history of this patient indicates that mitral obstruction should always be sought and dealt with before tricuspid valvotomy. When this is done, the chances of pulmonary congestion and edema due to loss of the "protective" effect of the tricuspid stenosis will be avoided. An unusual hypotensive state followed the combined mitral and tricuspid valvotomy. The cause of this hypotension remains obscure.

Penicillin-Resistant Staphylococcal Pericarditis. E. A. Nieman. Lancet 1:1330-1332 (June 29) 1957 [London].

Since antibiotics were introduced, most acute micrococcic (staphylococcic) infections have been cured; but septic pericarditis is still a serious complication, particularly if the organism is penicillin-resistant. The author reports a 49-year-old man with a fulminating micrococcic septicemia. Blood culture, sputum culture, and culture of pus from 2 subcutaneous abscesses gave a pure growth of a coagulase-positive Micrococcus aureus, resistant to penicillin but sensitive to erythromycin and oxytetracycline (Terramycin). Treatment with penicillin and streptomycin was therefore discontinued. Pericarditis developed, but the patient recovered with oral administration of erythromycin, pericardial aspiration, and intrapericardial administration of chlortetracycline (Aureomycin). Pericardial aspiration was performed 9 times in the course of 4 weeks, and micrococci were grown on each occasion except the last. A subsequent episode was attributed to temporary constrictive pericarditis after healing. That constriction has not recurred means that this case cannot be classed as one of constrictive pericarditis, but further constriction may develop. The relationship between septic pericarditis and constrictive pericarditis is still uncertain.

The Cardiorespiratory Syndrome of Obesity. G. A. Lillington, M. W. Anderson and R. O. Brandenburg. Dis. Chest 32:1-20 (July) 1957 [Chicago].

The authors report on 8 obese patients, 7 men between the ages of 40 and 66 years and 1 28-year-old woman who were admitted to the Mayo Clinic. In 4 of these obesity and secondary polycythemia were present without evidence of intrinsic pulmonary or cardiac disease. In 3 patients with primary pulmonary disease, obesity was thought to have played a significant role in the development of hypoxemia and secondary polycythemia. One patient did not have polycythemia, but tests of pulmonary function suggested that he manifested the early stages of ventilatory impairment of obesity.

Marked obesity may be associated with alveolar hypoventilation, arterial hypoxemia, hypercapnia, and secondary polycythemia in the absence of primary pulmonary or cardiac disease. Pulmonary hypertension and failure of the right side of the heart may develop secondarily. Appropriate loss of weight is accompanied by reversal of these complications. In patients with primary pulmonary or cardiac disease, obesity aggravates the dysfunction and loss of weight may produce considerable clinical improvement. The mechanical effect of obesity in increasing the work of breathing is the primary factor in the genesis of the alveolar hypoventilation, which appears to be the significant abnormality in patients with a clinical syndrome characterized by extreme obesity, cyanosis, breathing irregularities, congestive heart failure, and a tendency toward excessive lethargy and somnolence.

The Nature of the Pigmentary Disturbance in Addison's Disease. B. Hudson and G. A. Bentley. Australasian Ann. Med. 6:98-104 (May) 1957 [Sydney, Australia].

Experiments are described which show that the pigmentary disorder in Addison's disease results from an excessive production of pituitary melanocyte-stimulating hormone. The hormones were assayed by the use of intact toads when concentration was high (for example, pituitary extracts) and of isolated toad skin for low concentrations (for example, blood). A method for isolation of the hormone from blood is outlined. With these methods it has been shown that in persons with Addison's disease an excessive amount of melanocyte-stimulating hormone is present in the blood and that this decreases after treatment with cortisone or its derivatives. It has also been shown that the blood melanocyte-stimulating hormone concentration is lowered in patients with destructive lesions of the pituitary. The significance of these findings in relation to disorders of melanin pigmentation is discussed.

Prophylaxis of Rheumatic Fever: Review. V. Faber. Ugesk. læger 119:829-835 (June 27) 1957 (In Danish) [Copenhagen].

Early effective penicillin treatment of all acute streptococcic infections decreases or removes the danger of the development of rheumatic fever. All suspicious infections should be treated as early as possible and for a sufficiently long time. In case of hypersensitivity to penicillin other antibiotics can be used, as, for example, 250 mg. of Aureomycin 4 times daily for 10 days. Sulfonamides are ineffective. By continuous prophylactic treatment with oral administration of sulfadiazine or of penicillin or intramuscular injection of Benzathine penicillin G the nose-throat cavity can be kept free from hemolytic streptococci. The primary attack of rheumatic fever can be prevented from developing only by penicillin treatment of the acute streptococcic infection. Prophylaxis is recommended for all children who have had rheumatic fever, to be continued through childhood, and should be applied for at least 3 years after an attack in an adult. For persons who have had rheumatic fever prophylaxis is recommended (1) when they have colds, (2) if there are streptococcic infections in the home, (3) if the patient is to have a tonsillectomy or a dental extraction, and (4) if the patient is likely to be exposed to streptococcic infections, as in military camps. The patient must understand the importance of keeping up the treatment. The author prefers first to try to get along with sulfadiazine, in order to have penicillin in reserve for possible streptococcic infection, for infection with sulfonamide-resistant bacteria, and for other superinfections. If penicillin is chosen as the prophylactic agent, intramuscular administration seems to be more reliable than oral administration. Although resistant bacteria are a risk to be borne in mind, this together with other disadvantages must be weighed against the advantage of prophylactic treatment.

Hodgkin's Disease (Lymphogranulomatosis): Symptomatology and Results of Treatment in 200 Cases. L. Heilmeyer, G. Mössner and W. Hunstein. Deutsche med. Wchnschr. 82:1046-1050 (June 28) 1957 (In German) [Stuttgart, Germany].

The histories of 200 patients with Hodgkin's disease were analyzed. Complete records were available in 180 of these patients, 126 of whom had died. The greater incidence of the disease in the age group between 20 and 30 years could be corroborated. There was a slight excess of male over female patients. The survival varied between 6 weeks and 17 years. There was no evidence of a familial predisposition nor of a connection with tuberculosis, tumors, hematologic or metabolic diseases, or disorders of the lymph nodes. Swelling of the lymph nodes was the most important symptom, being the first in about 75% of the patients, and in some it remained the only symptom. The cervical lymph nodes were most frequently involved. Other symptoms such as weakness, loss of appetite and weight, fever, itching, dyspnea, cough, and pain in various regions occurred with varying frequency. The results of laboratory tests varied greatly, except for the increase in the copper and the decrease in the iron contents of the serum. To verify the diagnosis puncture of the lymph nodes was performed in 67 patients; in 49 of these the results corroborated the presence of Hodgkin's disease, in 2 others this diagnosis was made probable, and in 15 this test was of no value. The results of exploratory excision of the lymph nodes were somewhat more reliable, in that they corroborated the diagnosis in 107 of 118 patients.

The evaluation of treatment proved difficult, because for such an evaluation a fairly uniform patient material should be available, which was not the case. The disease is so protean in its manifestations and shows such variability in its course that 200 cases are an inadequate number to arrive at statistically reliable results. The results obtained corroborated to a great extent those reported in the literature. An average survival of 46 months was obtained, 51.9 months in women and 43.7 months in men. In 41 patients with localized lesions treated only with roentgen therapy, the average survival was 53.2 months, 39.7 in the men and 64.6 in the women, again showing that the prognosis for survival is somewhat better in women. In 97 patients with generalized lymphogranulomatosis, chemotherapy, in the form of the nitrogen mustard, dichlordiethylsulfide, was combined with roentgen therapy. This combination therapy achieved about the same length of survival in the generalized, more severe forms of Hodgkin's disease as did the exclusive roentgen therapy in the milder localized lesions. The effect of dichlordiethylsulfide alone could not be evaluated; it was used in only 16 patients.

Survival has been increased by an average of about 30 months since the introduction of the combined treatment, although chemotherapy alone seems to achieve the shortest survival. It was observed also that with successive remissions, the individual period of remission becomes shorter. Contrary to the widely held belief that earlier onset of treatment achieves longer survival, the authors found that the time of onset of treatment had no effect on the course of the disease, probably because with lesser severity more time elapses until treatment is begun, whereas in the severer forms the earlier manifestation of symptoms leads to earlier treatment. While this may lead to less confidence in therapeutic efforts, it should not lead to complete resignation. The combination of chemotherapy with irradiation was most effective as regards not only the prolongation of life but also the restoration of the working capacity between the recurrences. No treatment will change an initially malignant process into a benign one, and the fact that each case of Hodgkin's disease takes its own individual course cannot be changed.

The Painful Shoulder Syndrome: Study of 2 Atypical Cases. S. Brusadelli, U. Comandini and A. Mussafia. Boll. Soc. ital. cardiol. 1:158-164 (No. 3-4) 1956 (In Italian) [Rome].

The authors report on 2 patients with atypical painful shoulder syndrome. The first patient, a 32-year-old man, experienced pain in the left shoulder followed by fever the next day. The pain was present in the left shoulder only and did not radiate. The pain became very sharp when the patient moved the shoulder. His blood pressure was 110/70 mm. Hg. Roentgenologic examination revealed an infarct in the posterior wall of the left ventricle; no significant alterations were observed in the shoulder. Blood sugar and cholesterol levels were normal; the erythrocyte sedimentation rate was increased slightly. The patient was examined a month later. The shoulder was less painful, the erythrocyte sedimentation rate had become normal, and the blood pressure had risen to 140/85 mm. Hg. The second patient, a 42-year-old man, had pain in the left shoulder a year before reporting for observation. Roentgenologic examination of the shoulder revealed extensive osteoporosis in the upper end of the humerus and calcification in the supraspinous tendon. Electrocardiograms gave negative results. Physical therapy and cortisone had a good effect on the syndrome. One year later, the patient experienced a sharp pain in the shoulder radiating into the anterior part of the thorax, fever, and a drop in the blood pressure. Electrocardiographic examination revealed a recent infarct in the posterior wall of the myocardium. The erythrocyte sedimentation rate was slightly high, and cholesteremia and glycemia were normal. Regression of the alterations was observed 2 months later.

Thrombophlebitis Migrans. A. A. Lefemine and R. Warren. Angiology 8:266-271 (June) 1957 [Baltimore].

Thrombophlebitis migrans is a recurring migratory phlebitis that usually affects segments of superficial peripheral veins, although it may involve major and visceral veins. It may involve multiple sites simultaneously or at intervals of time. It tends to subside spontaneously in weeks to months. It assumes clinical importance because of its association with thromboangiitis obliterans, because of fatalities associated with visceral involvement, and because of recurrent periods of disability. The present study was undertaken to clarify the relationship of thrombophlebitis migrans to thromboangiitis obliterans and specifically to establish a prognosis for patients appearing with superficial thrombophlebitis migrans without evidence of arterial disease. All patients with phlebitis migrans seen at the vascular clinic of the West Roxbury Veterans Administration Hospital and the Boston Veterans Administration Hospital between April, 1945, and December, 1952, were reviewed.

Eighteen patients with phlebitis migrans were observed. Eleven of those with phlebitis migrans had signs of arterial occlusive disease clinically consistent with thromboangiitis obliterans. The remaining 7 patients had no arterial involvement at the time of the initial examination, and studies on these 7 patients are discussed. During the follow-up period of from 3 to 11 years arterial disease developed in none of the patients, although the vein biopsies in 2 revealed microscopic changes characteristic of thromboangiitis obliterans. Despite the continuation of activity of the disease in 4 of the patients, little disability was suffered from the condition, and involvement of the deep veins devel-ed in only one. Smoking did not produce any leterious effect in the 4 who continued to smoke, though episodes of phlebitis migrans stopped ith cessation of smoking in 2.

nportance of Antistreptolysin Values in the Diag- osis of Rheumatic Disease. L. Bertoni and N. Caz- rolli. *Policlinico (sez. prat.)* 64:512-516 (April 8) 57 (In Italian) [Rome].

Rheumatic fever has not only somatic but also sceral manifestations. The latter include pul- onary, pleural, mediastinal, renal, pancreatic, docrine, nervous, ocular, and cutaneous disease. ecent researches have concerned themselves in rt with the alterations of the collagen tissues, in rt with variations in the immunoallergic mecha- sms. In connection with the latter problem the thors have carried out determinations of anti- reptolysin titer in 122 patients, of whom 22 had ute articular rheumatism, 8 had rheumatoid thritis, 9 had sequelae of mitral endocarditis, and had glomerulonephritis. The highest titers (2,500, 5 instances) were seen in the cases of acute ticular rheumatism. Titers as high as 1,250 were tained in 2 out of 5 patients with chorea minor, of 2 patients with erythema nodosum, 1 of 2 pa- ents with follicular tonsillitis, and 4 of the 9 tients with glomerulonephritis.

The authors conclude that the finding of a high reptolysin titer helps in the diagnosis of rheu- atic fever and constitutes an indication for defi- ite antifocal treatment. A low titer, however, nnot be interpreted as excluding rheumatic fever, nce low titers occur during subacute and chronic eriods in the course of the disease. Its peculiar lue lies in the fact that, being an expression of e patient's immunoallergic status, it is not always fluenced by hormone therapy in the same way other laboratory tests, and thus gives independent formation of prognostic value.

hromboangiitis Obliterans in a Female. H. Gaylis. ngiology 8:259-265 (June) 1957 [Baltimore].

Thromboangiitis obliterans, a segmental inflam- atory obliterative disease of arteries and veins, enerally confined to the extremities, occurs almost clusively in young or middle-aged males. The uthor presents the history of a 40-year-old woman ho complained of pain, coldness, and swelling of e toes of both feet of 2 years' duration and ramps in the calves on walking a distance of 100 d. At about the same time she experienced epi- odic attacks of coldness and blueness of the fingers f the right hand affecting principally the ring and ttle fingers. These attacks lasted from one to everal hours and were precipitated by fatigue and old. Later the fingers of the left hand became ffected but to a lesser degree. The symptoms in he hands improved after several months. There was no history of superficial phlebitis. Both feet were cold and moderately edematous. Pallor was noted on elevation and rubor on dependency. The upper extremities revealed no trophic skin changes, but the left radial artery at the wrist was not palpable. Thromboangiitis obliterans was considered as a possible cause of the obliterative arterial lesions in the extremities and was demonstrated by right and left femoral and right brachial arteriography.

A bilateral lumbar sympathectomy was performed, and at the same time a segment of the right dorsalis pedis artery and vein was excised for histological section. The sympathectomy resulted in a subjective and objective increase in skin temperature, and pain in the toes was partially relieved. The histological report on the excised dorsalis pedis artery stated that the vessel was plugged by an old organized recanalized thrombus without any evidence of primary vascular disease. Thromboangiitis obliterans is extremely rare in women. From a study of 10 large reviews on the disease involving almost 4,500 cases, the incidence in females is approximately 1%. The number of recorded and proved cases is probably less than 10.

SURGERY

The Use of Coronary Perfusion and Carbon Dioxide Regulation in Intracardiac Operations Performed Under Hypothermia. F. C. Spencer, J. R. Jude and H. T. Bahnson. Surgery 42:76-90 (July) 1957 [St. Louis].

Intracardiac operations performed during circulatory occlusion with the patient under general body hypothermia are subject to 2 major limitations. These are, first, the short period of time that the heart can withstand circulatory interruption, which can be prolonged only by perfusion of the coronary arteries with oxygenated blood, and, second, the susceptibility of the heart to ventricular fibrillation, which can be reduced by limiting the degree of hypothermia to 28 C, perfusion of the myocardium to avoid anoxia, and regulation of the ventilatory rate so that the alveolar carbon dioxide level is at near normal levels. Twenty-nine operations with the aid of moderate general body hypothermia in association with coronary perfusion and alveolar carbon dioxide regulation were performed: 12 for atrial septal defect, 8 for pulmonic valvular stenosis, 2 for infundibular stenosis, 5 for aortic stenosis, and 2 for total anomalous drainage of the pulmonary veins. The duration of caval occlusion varied from 2 to 12 minutes, the temperature range varying during this interval from 28 to 33 C. There were 7 deaths (24%), including 3 patients with calcific aortic stenosis, 1 with subaortic stenosis in association with right ventricular infundibular stenosis, 1 with atrial septal defect, 1 with pulmonic stenosis with atrial septal defect, and 1 with anomalous drainage of the pulmonary veins. Of the 4 instances of ventricular fibrillation, of which only 1 was successfully counteracted, 2 were attributed to underlying aortic stenosis and 1 to severe acidosis of unknown origin in a patient with atrial septal defect.

In the repair of atrial septal defect the cardiac contractions of the perfused heart were more vigorous than the contractions of the nonperfused heart, cardiac action in the perfused heart being as vigorous after 5 minutes as after 2 minutes, and the blood pressure upon termination of caval occlusion rising to near normal levels in a few seconds in the perfused hearts, while the nonperfused hearts had a more gradual return to preexisting levels. It is essential that coagulation of the perfused blood be prevented with heparin rather than with citrate, as the use of citrated blood results in cardiac arrest within minutes. Carbon dioxide regulation is important in that a decrease in spontaneous respiratory activity with hypothermia results in carbon dioxide retention and respiratory acidosis, which leads to ventricular fibrillation, alkalosis having been reported as giving significant protection against ventricular fibrillation. The absence of unexplained arrhythmias in patients whose blood pH was near normal levels (7.35 to 7.55) indicates that the ventilatory rate should be so regulated as to produce a pH within this range. One of the more important aspects of coronary perfusion is that, when myocardial oxygenation is maintained, blood pressure and cerebral circulation are immediately restored upon the termination of circulatory occlusion, and a period of hypotension is not attendant to the ischemia of circulatory arrest.

Mechanical Traction in Lumbar Disc Syndrome. W. B. Parsons and J. D. A. Cumming. Canad. M. A. J. 77:7-11 (July 1) 1957 [Toronto].

This series consists of 100 consecutive cases of disk syndrome treated by mechanical traction. This procedure accomplishes in minutes or hours what would otherwise require days or weeks. Cases not responding to manipulation, including those of lumbago, with or without radiation into flank, abdomen, buttock, inguinal region, or leg, were treated by mechanical traction utilizing the device developed by Cyriax. X-ray was done prior to treatment in order to rule out fracture, ankylosing spondylitis, tuberculosis, and neoplasm. Some patients were found to have congenital anomalies and others various degrees of disk degeneration. Patients ranged in age from 17 to 74 years, males predominating (69 to 31). The present attack was first for 45 patients, the remaining 55 having had one previous attack and in some instances recurring disability for years. The management of cases was identical in that, if manipulation failed, mechanical traction was employed with the object of developing a "sway back." Treatments were given daily, being discontinued if there was no relief from symptoms after the 8th session. Excellent results, with complete relief within a week, were obtained in 74 patients. General relief, but with some residual discomfort, was experienced by 12 patients, 12 others obtaining little or no relief and only 2 patients failing to show any improvement.

Extension of the Limits of Cardiac Viability with Total Coronary Occlusion. W. R. Webb and H. S. Howard. Surgery 42:92-100 (July) 1957 [St. Louis].

Wesolowski and his associates established the upper limit of cardiac viability in dogs in the absence of coronary flow at 30 minutes. The single reported case of Cooley and DeBakey of the resection of the ascending aorta in a 50-year-old man established the upper limit at 31 minutes. Crowell and others have demonstrated the formation of innumerable small clots during acute circulatory arrest or periods of depressed blood flow. Restoration of normal circulatory dynamics does not result in the passage of blood through these plugged capillaries, and the oxygen-deprived cells die even though irreversible tissue changes did not occur during circulatory arrest. Continuing anaerobic metabolism is characterized by the production of lactic, carbonic, and other organic acids to the extent that a progressive regional acidification causes coagulation of blood in the affected capillaries. Prevention of this coagulation by the use of heparin or by the activation of a fibrinolytic system with streptokinase will considerably prolong the time a tissue may be deprived of normal circulation. A series of experiments was designed to study the effects of long periods of total coronary occlusion when all blood had been removed from the coronary vascular bed, obviating the possibility of small capillary thromboses. In the first series the heart was attached to the neck of vessels of a large recipient dog, the experimental hearts having been perfused with Ringer's solution. Circulation was restored within 90 minutes to both control and experimental groups of this series. The control group of 3 dogs developed a fine fibrillation on restoration of coronary flow and showed no return of cardiac tone; none of the dogs could be resuscitated. The experimental group experienced fibrillation with return of coronary flow, each of the hearts developing good tone after the administration of calcium chloride, and was able to maintain the work load of its own coronary tract in addition to the burden of the inflow of the host carotid artery. In the second series with total inflow and outflow occlusion of the hearts in situ, difficulties were encountered with low flow rate of the pump-oxygenator (irreversible shock approximation) and hemorrhage. In the control group of 6 dogs all of the hearts improved in color and developed fine fibrillation, but only 3 of the hearts were able to turn to normal sinus rhythm, as the others did ot develop sufficient tone to be resuscitated. The cperimental group of 12 in situ perfused hearts sually started with fine fibrillation, the heart later eing defibrillated with the return of a strong co-dinated rhythm. Eleven of the dogs were able to aintain normal blood pressures, only 1 heart with ecurrent fibrillations failing under the work load. o long-term survival was possible even with the turn of cardiac function, as the animals were unble to reestablish an adequate breathing pattern. he finding that a heart can remain viable and funconal for increased periods of time and that this nit of viability of the unoxygenated myocardium more a measure of the patency of the capillary ed than the length of acute ischemia may have ture clinical significance.

yxoma of the Left Atrium: Successful Surgical emoval Under Hypothermia. E. F. Chin and D. N. oss. Brit. M. J. 1:1447-1449 (June 22) 1957 ondon].

Myxoma of the left atrium generally occurs as a olypoid tumor attached to the left side of the rial septum in the region of the fossa ovalis. The irgically correct approach to the tumor is from e right atrium through the fossa ovalis. Pathogically, the tumor (weight 60 Gm.) was smooth nd shiny, with a soft gelatinous consistency seen icroscopically as a structureless matrix with a few cattered cells. A minimum of intra-atrial maniprtion is mandatory during exploration of the mitral alve due to the friable nature of the mass and the absequent danger of a cerebral embolus. Surgial removal involves the use of suction of the tumor ntil it is small enough that it can be drawn through e septal incision and the pedicle together with a nall surrounding portion of the septum can be cised. Hypothermia is necessary to permit circutory arrest during the time interval required. A ood stream method of cooling is advantageous in at a delay in removal is avoided and rewarming a this method facilitates rapid resuscitation of the eart.

trial Septal Defect and Its Surgical Treatment. . E. Bedford, T. H. Sellors, W. Somerville and hers, Lancet 1:1255-1261 (June 22) 1957 [London].

Atrial septal defect is the most frequent single ngenital malformation of the heart encountered clinical practice. Rokitansky is responsible for stinguishing the 2 main anatomic forms of the nbryological basis of atrial septal defect, namely, efects of the septum primum and septum secunm. The anatomic complexities of atrial septal art defect are such that the advantages of direct sion and hypothermic anesthesia make open heart irgery the method of choice. An anatomic classication of this defect based on examination of pathological specimens, on published autopsy findings, and on the surgical experiences of the authors and others includes (1) atrioventricular defects (persistent ostium primum; endocardial cushion effect; partial common atrioventricular canal), (2) fossa ovalis defects (persistent ostium secundum), and (3) superior caval defects (sinus venous defects, high defect). These 3 defects may occur in combination. Uncomplicated atrial septal defect results in a left-to-right shunt such that the pulmonary flow usually reaches 2 to 4 times the systemic blood flow, which is normal or slightly reduced. Increased lung vascular resistance will cause reduced, balanced, or reversed left-to-right shunt. A bidirectional or reversed shunt is indicated by central cyanosis, pulmonary hypertension, and reduced arterial oxygen saturation. Cardiac catheterization diagnosis was confirmed by a significant increase in oxygen saturation of samples from and distal to the right atrium as compared to those obtained from the superior vena cava and easy and usually repeated passage of the catheter from the right into the left atrium through the septal defect. Clinical diagnosis is well established and involves a cardiac impulse of the right ventricular type (often displaced to the left), systolic lift over the outflow tract of the right ventricle and the pulmonary artery, pulmonary systolic thrill, pulmonary systolic murmur loudest in midsystole, possible systolic ejection sound, and a very obvious wide split second sound which varies little with respiration. In the observed group of 100 patients the electrocardiogram showed partial or complete right bundle-branch block in 72, right ventricular hypertrophy without bundle branch block in 18, left axis deviation in 7, right axis deviation combined with left ventricular hypertrophy in 1, and normal readings in 2.

Clinical diagnosis of atrioventricular (ostium primum) defects may include malformed mitral and tricuspid valves with a ventricular septal defect or with a common atrioventricular canal. The defect is generally suspected on detection of any one of the following: (1) unusual cardiac enlargement in childhood, (2) physical underdevelopment and mongolism, (3) pulmonary hypertension occurring below the age of 20, (4) pansystolic murmur of mitral or tricuspid incompetence (most significant), (5) evidence of left ventricular hypertrophy in the electrocardiogram, (6) left-to-right shunt at both atrial and ventricular levels, (7) bacterial endocarditis, and (8) complete heart block. Complications of atrial septal heart defect are obstructive pulmonary hypertension, pulmonary stenosis, atrial fibrillation, and anomalous pulmonary venous drainage. Mitral stenosis is, however, no contraindication to septal defect closure provided commensurate relief of stenosis is accomplished by means of valvotomy. Contraindications to septal closure under hypothermia anesthesia are atrioventricular type defect, reversed shunt with cyanosis, obstructive pulmonary hypertension, high vascular resistance, systemic hypertension, and advanced age and poor general condition. The method of hypothermia anesthesia used is that developed by Virtue in Swan's clinic and modified and administered by Sellick. Esophageal temperature of 30 C was considered ideal at the time of circulatory arrest, permitting arrest for at least 7 minutes, with a maximum safety margin of 10 minutes. Neostigmine was injected into the coronary circulation as a protection against ventricular fibrillation. There was no operative or postoperative mortality save for one fatalitiy, where after closure of a large defect it was found in a second operation that inferior vena caval blood was entering the left atrium.

Brain Abscess in a Patient with Congenital Heart Disease. A. Gund. Deutsche Ztschr. Nervenh. 176:449-456 (No. 4) 1957 (In German) [Berlin].

Gund presents the case of a 7½-year-old boy who was referred to the neurosurgical department with the signs of severe intracranial pressure. Three weeks before the boy had suddenly become ill with increase in temperature, headache, vomiting, and disturbances in the equilibrium. He had been sent to a children's hospital because poliomyelitis had been suspected. There was rigidity of the neck, and edematous swelling of the papilla was observed in the eyeground. Some days later the boy became somnolent, exophthalmos developed, and the pupils were greatly dilated. Brain tumor was suspected, and the child was referred to the neurological department. It was stated that the child had been cyanotic at birth and that at the age of 3 years a Blalock's anastomosis had been carried out for Fallot's tetralogy. Three years later, however, the anastomosis was no longer functioning, but a second operation on the heart had to be interrupted after the thoracotomy, and since then the heart condition had remained unchanged. Increasing neurological symptoms and further examinations disclosed a brain abscess in the parietal region on the left side. After it was drained the hemiparesis and other neurological symptoms gradually subsided. Nine months later another abscess developed, this time in the parietal region on the right side. This abscess was also effectively treated by drainage.

The author reviews the literature on "paradoxical brain abscesses" in patients with congenital heart disease, pointing out that particularly in the neurological literature of Europe this complication of congenital heart disease is not sufficiently well known. He found that among a total of 70 cases of paradoxical brain abscess with congenital heart disease this was the 10th case in which surgical treatment was successful and the second patient who survived an operation for a second paradoxical brain abscess. Literature reports indicate that of the various congenital defects of the heart the tetralogy of Fallot is the most frequent cause of the paradoxical brain abscess. The pathogenesis of these abscesses is briefly discussed.

Bronchial Hamartochondromatosis. R. Debré, P. Mozziconacci, J. P. Binet, R. Habib and P. Renault. Presse méd. 65:1181-1184 (June 26) 1957 (In French) [Paris].

Hamartochondromatosis is a benign tumor of bronchial origin. It manifests itself as a globular intrapulmonary mass on radiologic examination. Exceptionally, it takes a form of an intrabronchial neoplasm. The authors treated a 14-year-old boy for a type of hamartochondromatosis which was manifested by diffuse cartilage hypertrophy of the large, middle, and small bronchi, associated with mesenchymal and epithelial proliferation. These lesions were not detected on bronchoscopic examination. There was an emphysema of the parenchyma of the right lung, except for the upper lobe. Unlike the typical hamartochondromatosis, which is a local lesion, the lesions in this case were diffuse, involving the entire bronchial tree and its cartilaginous structure. Hamartochondromatosis affects persons of all ages, but mostly adult males. Treatment consists of an exploratory thoracotomy and resection. The intrabronchial types can be detected by endoscopic examination, and resection can be performed at the same time. In this case, the extent of lesions required extensive lung resection.

Pericardiectomy for Constrictive Pericarditis. C. Havard. Thorax 12:148-151 (June) 1957 [London].

Although pericardiectomy is recognized as an effective treatment for constrictive pericarditis opinions still vary about such problems as whether an incomplete removal of the pericardium is compatible with good functional results and which region of the heart it is particularly important to liberate. The author attempts to answer these questions on the basis of observations on 16 patients who were subjected to pericardiectomy between 1948 and 1956. The patients ranged in age from 20 to 58 years. Two patients, aged 51 and 5 respectively, died during the postoperative period. A tuberculous etiology was considered proved in 5 patients, and calcification occurred in 11. Three patients were operated on while the disease appeared to be still in an active phase, with no evidence of resulting spread of the infection. Of the 1 patients who survived the operation, 1 could not be traced, another was still undergoing hospital treatment for his pulmonary tuberculosis, and a third could be reached only through correspondence. The remaining 11 patients were reexamined, and the length of follow-up varied from 8 months to 8½ years.

The pericardiectomy in these patients was limited mainly to the region of the ventricles, and it was found that this conservative operation was consistent with a good functional result. An extended posterolateral thoracotomy proved to furnish an adequate exposure for this operation. In the patient whose history is presented in detail the pericardium was incised and dissected off the anterior aspect of both ventricles and along the ventral border of the left ventricle. The heart was also freed over the posterior aspect of the left ventricle, and its pulsation was greatly improved. The left pleural cavity was drained with apical and basal tubes. Postoperatively, the patient's cyanosis and pleural effusions persisted for some weeks but finally responded to mercurial diuretics and abdominal paracenteses. Histological examination of the pericardium gave no clue to the etiology. The patient did not attend a follow-up clinic until nearly 5 years after her operation, when she stated that she had remained quite well since her operation and had been able to carry out her household duties without further treatment. Clinical improvement seems possible after liberation of the ventricles only, even though the right side of the heart remains encased in calcification.

Gastrectomy Extended to Typical Partial Resection of the Liver Infiltrated by Cancer of the Stomach. M. Mancuso, G. Del Grande and E. Natalini. Policlinico (sez. chir.) 64:151-159 (June) 1957 [Rome].

Very good results were obtained in 3 patients with gastric neoplasm involving the left lobe of the liver, who were subjected to a gastrectomy with resection of the left lobe of the liver. The authors believe that a neoplastic involvement of the left lobe of the liver is not a contraindication to a radical operation.

Massive Oesophageal Haemorrhage. R. Zenker. German M. Month. 2:165-167 (June) 1957 (In English) [Stuttgart, Germany].

Massive esophageal hemorrhage caused by esophageal varices is much less common than massive gastric bleeding, only 64 (16%) of 400 cases of severe hematemesis having been found to be due to esophageal varices. A history of liver disease, enlarged spleen, ascites, or caput medusae should suggest that hematemesis or melena is caused by esophageal varices. The introduction of a triple-channeled ballon tube type apparatus into the esophagus and positioning by inflation below the level of the cardia has both therapeutic and diagnostic value. Should the hemorrhage stop immediately after the tube has been positioned, the bleeding is in all likelihood of esophageal origin, and in two-thirds of the patients with bleeding esophageal varices the hemorrhage stops after the ballons are deflated and the tube is withdrawn. Continued aspiration of large quantities of blood in spite of the correct position of the ballon is indicative of hemorrhage of gastric or duodenal origin. Continued bleeding from esophageal varices after withdrawal of the tube is best arrested by transesophageal ligation of the varices. Splenectomy is contraindicated during an acute hemorrhage and in all other forms of portal hypertension, as it lowers the portal pressure only temporarily and produces progressive thrombosis of the splenic vein in the direction of the portal vein. The most effective method of relieving portal hypertension is portacaval anastomosis, the success of which is dependent upon the size of the anastomosis and the absence of tension. Portal hypertension may be due to intrahepatic block, usually in cirrhosis of the liver from various causes, or to extrahepatic block resulting from either aplasia or hypoplasia of the portal vein or the Budd-Chiari syndrome of thrombosis of the hepatic veins. Portal hypertension due to intrahepatic block is best treated surgically, by end-to-side portacaval anastomosis. Markedly reduced liver function concomitant with portal hypertension is usually relieved surgically with a side-to-side portacaval anastomosis, as this technique does not result in the distinct depression of liver function peculiar to the end-to-side procedure. Other suggested methods of treatment are ligature of the celiac artery and its branches and side-to-side anastomosis between the portal vein and the proximally ligated hepatic veins. Massive esophageal bleeding also occurs in carcinoma of the cardia or of the esophagus, gastric ulcer in the esophagus, hemangioma of the esophagus, and aortic aneurysm perforating into the esophagus.

A Critical Review of the Results of Lung Resection for Pulmonary Tuberculosis. B. J. Bickford, F. R. Edwards, J. R. Esplen and others. Thorax 12:152-158 (June) 1957 [London].

Between 1947 and 1956 pulmonary resection was carried out on 1,575 patients with tuberculosis in 2 Liverpool hospitals. Although a certain number of patients with active bilateral disease were subjected to thoracoplasty, resection was the method of choice in the surgical treatment. The use of chemotherapy has so altered the scheme of treatment that surgery must be considered as a secondary therapeutic measure, and in many patients it is impossible to evaluate its role in the final result. Since some of the removed specimens show sterilized cavities or the absence of histological evidence of active disease, the role of surgery might be difficult to estimate. Nevertheless, patients are subjected to surgery because some physicians believe that chemotherapy will not ultimately heal the lesion. The authors are of the opinion that the development of bacillary resistance to chemotherapy may have a marked impact on the use of resection, as its success depends greatly on the employment of drugs to control transbronchial spread of the disease or contamination of the site of operation. To assess the value of resection treatment the authors made a survey of the first 399 patients, in whom at least 5 years had elapsed since operation. Only 2 of these 399 patients could not be traced. The entire series of 1,575 patients was reviewed in studying the immediate complications of the operative treatment.

The authors believe that resection can be accepted for that form of the disease that cannot be healed by rest and chemotherapy. Except for the minor segmental resections a space-reducing operation (thoracoplasty) is obligatory, either simultaneously with the resection or at a second operation. This opinion may be altered when more becomes known about the results of chemotherapy continued for 1 or 2 years after the operation. Experience so far has disproved the earlier hope that the thoracic cage could be left intact. Some 87% of the patients operated on are well and free of evidence of active disease at the end of 5 years. Nine per cent still have active tuberculosis or have died of the disease in this period. Resection treatment has justified itself.

Streptokinase and Streptodornase in Thoracic Surgery for Pulmonary Tuberculosis. B. G. Streete and D. E. Thomas. J. Thoracic Surg. 34:49-52 (July) 1957 [St. Louis].

Varidase, a preparation containing 100,000 units of streptokinase and 25,000 units of streptodornase per vial, was used in 37 patients with pulmonary tuberculosis in whom hemothorax or hemopneumothorax occurred as a complication of operative procedures which consisted of segmental resection in 22, lobectomy in 8, decortication in 6, and lobectomy combined with segmental resection in 1. These complications, mild to severe hemothorax in 25, and hemopneumothorax of varying severity in 12, appeared within the second postoperative day and in 1 patient on the third postoperative day. Generally 2 and occasionally 4 vials of a freshly prepared solution of Varidase (60 cc. of the diluent) were introduced into the hemothorax by puncture of the clamped-off intercostal drainage tubes, the dose being divided between the 2 tubes. An attempt was made to keep the tubes clamped off for at least 4 hours, and acetylsalicylic acid (aspirin) was used as an antipyretic. Occasionally it was necessary to open the tubes after only 2 or 3 hours because of fever and chest pain. The systemic effects promptly disappeared after the tubes were opened. Results of enzymatic débridement were classified as good in 22 patients, equivocal in 4, and poor in 11. The best results were obtained in patients with mild to moderate hemothorax. Results were poor or equivocal in all but 1 of the 12 patients with hemopneumothorax. The enzymes have little value when the hemothorax is accompanied by a large element of pneumothorax. Injection of the drugs through the clamped-off chest tubes on the first to the third postoperative day is the method of choice.

Plombage in the Surgical Treatment of Pulmonary Tuberculosis: A Study of 400 Cases. H. Joly, P. Tulou, J. Tiret and J. Villemin. J. Thoracic Surg. 34:36-48 (July) 1957 [St. Louis].

Of 400 patients with pulmonary tuberculosis subjected to surgical treatment with methylmethacrylate (Lucite) balls as a permanent prosthesis at a high-altitude sanatorium in France, 345 had collapse therapy and 55 had lung resection. One hundred seven of the 345 patients had one-stage thoracoplasty, 75 had multistaged thoracoplasty, 157 had extramusculoperiosteal pneumolysis, and 6 had a revisional collapse. There were 3 early deaths (0.9%) among the 345 patients, all of them occurring in patients who underwent multistage thoracoplasty and were over 40 years of age. Three hundred one of the 345 patients were followed up for from 1 to 6 years. Of the 301 patients the disease was arrested in 215 and 43 were improved. The plombage was extremely well tolerated, provided it was separated from the lungs and mediastinum by a continuous wall of intercostal muscles with an intact blood supply, and periosteal beds. The addition of pombage to surgical collapse provides several advantages. It prevents pulmonary reexpansion and reduces to a minimum the morphologic and functional side-effects of collapse therapy.

In the 55 patients on whom pulmonary resection was performed, Lucite balls were placed in the hemithorax after the operation to help fill the residual place. The prosthesis was inserted either immediately within the pleural cavity or, at a later stage, in the thoracic wall. The technique of intrapleural plombage after extensive resection at the end of the operation may have contributed to the occurrence of bronchopleural fistulas and was subsequently abandoned. Results were very satisfactory in 21 patients with partial or total resection in whom an extramusculoperiosteal pneumolysis was performed several weeks or months after the operation. It is generally agreed that resection is the best surgical treatment for pulmonary tuberculosis. However, when surgery is indicated and resection is impossible or potentially dangerous, limited thoracoplasty without resection of the first rib and extramusculoperiosteal pneumonolysis without cutting or resecting any rib but with the addition of Lucite balls may offer a better chance to the patient than conventional collapse therapy or continued medical treatment and should, therefore, be considered.

Solitary Gallstones: Symptoms, Complications, and Treatment. C. L. S. Bohn. Ugesk. læger 119:762-764 (June 13) 1957 (In Danish) [Copenhagen].

Solitary gallstones, either in the gallbladder or choledochus, were found in 84 of 607 patients operated on for gallstones. The symptoms were uniform in the patients with solitary and with multiple gallstones, apart from the more frequent diastasuria in the latter, but complications occurred in 49% of the former and in 37% of the latter. Solitary gallstones more often than the multiple can cause violent symptoms and conditions threatening life. The increased frequency of complications in patients with solitary gallstones is predominantly due to the wedging of the stone in Hartmann's pouch, with resulting hydrops, empyema, wall gangrene, and possible perforation. Early operative intervention is at present the only method for reducing the operative mortality and complications.

Massive Gastric Haemorrhage. R. Nissen and F. Enderlin. German M. Month. 2:161-165 (June) 1957 [Stuttgart, Germany].

Clinical diagnosis of the exact site of hematemesis must first differentiate between gastric and esophageal hemorrhage with use of a multichanneled tube which carries a balloon that is inflated at the level of the diaphragramtic hiatus, permitting separate aspiration of gastric and esophageal contents. Gastroscopy is generally of little value, as the field of vision is limited almost exclusively to the lesser curvature. Radiologic examination without compression of the epigastrium is considered of some value; carcinoma in the fundus may be demonstrated by injecting air into the stomach. The first hemorrhage should be treated conservatively, surgical intervention being deemed necessary should blood replacement for continued bleeding exceed 500 cc. in an 8-hour period. Patients exceeding 50 years of age rarely have spontaneous recovery from even the first massive hemorrhage, and the possibility of irreversible shock that could ensue is ample justification for surgical intervention. The diminished elasticity of the arterial wall, the increasingly harmful effects of anoxia upon liver function, the deleterious effects of prolonged hemorrhage upon kidney function, and the aspiration of blood, all of which are more prevalent in the older patient, argue for surgical intervention. The exact localization of the source of bleeding is often difficult despite the presence of macroscopic lesions, e. g., the relatively small but deeply penetrating ulcer in the posterior duodenal wall, which cannot be palpated but only visualized upon opening the duodenum. Blood in the upper jejunum indicates gastric or duodenal hemorrhage. Gastric hemorrhage has been routinely treated by a removal of two-thirds of the stomach by a Billroth 2 resection. There is a growing tendency to treat hemorrhage secondary to gastritis or reactive hemorrhage by performing a two-thirds gastric resection as advised by Konjetzny. The author reports success in the stoppage of renewed or continued bleeding in the resected stump by bilateral vagotomy. Gastropexy is advocated in the rare cases of severe bleeding from a hiatus hernia. Laparotomy is advised in the event of continued bleeding after gastric operations. Three case reports are descriptive of special situations: gastric hemorrhage after radical esophagectomy for carcinoma; bleeding from acute ulceration following extensive burns; and hemorrhage from a benign tumor.

The Changing Picture of Lung Abscess Therapy. M. W. Wolcott and J. D. Murphy. Dis. Chest 32:62-69 (July) 1957 [Chicago].

Of 65 patients with lung abscess treated within the last 15 years, 19 were treated during the sulfonamide period of 1941 to 1944, 29 were treated during the penicillin period of 1945 to 1951, and 17 were treated during the antibiotic and tryptar period of 1952 to 1955. In the first period treatment consisted of administration of sulfathiazole and sulfadiazine in various dosage regimens, surgical procedures such as simple incision and drainage or 2-stage pneumonotomies, supportive measures, bronchoscopic aspirations, and postural drainage. In the second period penicillin was used both parenterally and by the aerosol route. Surgical procedures were the same as in the first period, except that from 1949 on resection was performed in most patients requiring surgical intervention. Supportive treatment was unchanged, bronchoscopy was used as a diagnostic and therapeutic agent, and postural drainage was enforced. In the third period supportive treatment remained unchanged and bronchoscopy was used routinely but only as a diagnostic aid and as a means of securing accurate culture material. The antibiotics used were oxytetracycline (Terramycin), penicillin, and tetracycline (Achromycin). The drug used was selected with the aid of sensitivity studies of material obtained at bronchoscopy before the institution of therapy. Aerosol administration of the most effective drug was used in all patients. In about 50% of the patients, oral or parenteral administration of antibiotics was practiced also for the first few days after admission. All patients were given crystalline trypsin (Tryptar) in aerosol form. This drug was administered in doses of 125 Gm. in 2 cc. of diluent daily for 5 to 10 days, and then every second day for a period of from 2 to 4 weeks. Surgical procedures consisted of resections in each patient. No surgical drainage procedures were done.

The mortality rate dropped from 31.5% in the first group of patients, to 17.2% in the second group, and to zero in the last group. Early diagnosis and treat-tained for the entire series of patients with osteogenic sarcoma seems to be extremely significant, especially when it is compared with other published data showing lower survival rates. The treatment of osteogenic sarcoma that has been most successful in the authors' hands is early surgical ablation. The authors do not see any theoretical or proved reason at present for any other form of therapy, unless amputation is not possible.

The Transfixion Hip Prosthesis: Observations Based On Five Years of Use. R. K. Lippmann. J. Bone & Joint Surg. 39A:759-785 (July) 1957 [Boston].

The author reports on 23 patients, 5 men and 18 women, between the ages of 16 and 86 years, in whom the transfixion hip prosthesis was used; 8 were operated on for osteoarthritis and 15 because of failure of intracapsular fractures to heal. The transfixion prosthesis, composed of the head, the pivot rod and, a third part in which the stem, the saddle, and the end-plate are joined, combines the mechanical principle of the crane for strength and the transfixion principle for dispersion of weight-bearing pressure and for firm fixation. Corrugated collars may be used to restore the length when the femoral neck is small. The lateral approach to the hip joint as described by Gibson and modified by McFarland proved highly satisfactory for exposure of the crest of the femoral neck and consequently for the insertion of the transfixion prosthesis.

The excellent interval result that may be achieved by use of the prosthesis has been well illustrated by the clinical course of the first patient in whom the transfixion prothesis was utilized. The 72-year-old patient was operated on 5½ years ago because of failure of interval fixation to maintain position 4 months after intracapsular fracture. Examination revealed no pain or limp or limitation of motion in the involved hip. There was no shortening. Muscle power was normal in all places, including adduction; there was no asymmetry seen when the patient walked up or down stairs. The extremity operated on could be identified only by the scar and with the aid of roentgenograms, which showed the complete maintenance of stability throughout the follow-up period and the almost normal and mature trabecular structure of the host bone. Although the number of patients in this pilot study is small and interpretation must be done with caution, striking correlation between prosthetic seating, prosthetic stability, and ultimate clinical competence and performance was evident. Accurate seating of the transfixion prosthesis with adequate contact of the end-plate to the stump in patients with normal bone structure in whom there was no infection consistently yielded survival and hypertrophy of the contacting femoral-neck stump, prosthetic stability, and sustained painless or almost pain-free performance for the duration of the period of observation. The enduring favorable result would appear to depend on the capacity of the transfixion prosthesis to apply adequate nonabrasive and nonshearing supportive pressure on the end of the neck stump and the consequent preservence and stabilizing support of the femoral neck. Accurate insertion is essential.

In patients in whom significant symptoms developed after insertion of the prosthesis, a clearly identifiable cause was always apparent. The major cause of prosthetic instability and decreased mobility was stump absorption due to inaccurate prosthetic seating or infection. The sharp decline in both of these complications in patients operated on later in the study followed the use of the posterolateral approach which provided ample room for accurate seating of the prosthesis without the excessive and tissue-damaging retraction that, in earlier cases, seemed to predispose to infection. The return of full abductor power in almost all of the patients in whom the operation was successful showed the capacity of the transfixion prosthesis to approximate normal length of the femoral neck. The soft bone of florid osteitis deformans would appear to be unsuitable for prosthetic insertion, but even a marked degree of senile osteoporosis did not present a barrier to prosthetic stability or to enduring clinical performance. The results lead to the belief that the design of the transfixion prosthesis is capable of yielding stability and lasting competence and performance.

NEUROLOGY & PSYCHIATRY

Histopathology of Meningo-facial Angiomatosis (Sturge-Weber's Disease): Report of Four Cases. F. J. Wohlwill and P. I. Yakovlev. J. Neuropath. & Exper. Neurol. 16:341-364 (July) 1957 [New York].

The history of the knowledge of Sturge-Weber's disease is characterized by a gradual accretion of new data upon already known facts and by the roentgenographic misinterpretation of the characteristic intracranial calcification for calcified blood vessels. The outstanding feature in this series of patients with Sturge-Weber's meningofacial angiomatosis was the polymorphism of the histopathological changes in the malformed blood vessels in different organs. It is significant that in the cerebral substance itself no true angioma was seen, while angiomatous malformations did involve the mesodermal coverings of the brain, the meninges, cranial bones, and skin of the face and scalp (port wine nevus). In the coordinated participation of the derivates of several blastemas Sturge-Weber's disease partakes of the characteristic general features of other neoplastic malformations such as tuberous sclerosis, von Recklinghausen's disease, and Lindau–von Hippel's disease. The leptomeningeal angiomas in Sturge-Weber's disease are venous angiomas, of which 3 types are distinguished: racemose, cavernose, and varicose. The histopathological changes in the tissues affected by the angiomatosis are of 2 orders: (1) the primary malformation, consisting of venous angioma in the mesodermal covering of the brain and in other locations of the body and manifested by the defects in the structural differentiation of the vascular wall and in the persistence of the sinusoid embryonal character of the vascular bed in the region of the angioma, and (2) the secondary changes in the malformed blood vessels and in the tissues affected by the angiomatosis. The secondary changes include those due to functional inertia of the malformed blood vessels (fibrosis, hyaline degeneration, dilatation and calcification leading to obliteration of the lumen, and transformation of the blood vessel into a concentric calcareous concrement, a psammoma body) and those due to circulatory and metabolic disturbances in the tissues affected by the angiomatous malformation. Neural crest derivate participation (Gasserian ganglion and sensory nerve roots) points to a probable congenital defect in the vasomotor innervation of the affected metamere.

Poliomyelitis: Effect of Salk Vaccine on Severity of Paralysis. M. G. Wyman, W. D. Lindgren and R. Magoffin. California Med. 87:1-8 (July) 1957 [San Francisco].

Among the patients in whom poliomyelitis was diagnosed at the Los Angeles County General Hospital during 1956, there were 642 patients who had not been vaccinated and 93 who had been vaccinated. In the vaccinated group of patients the proportion of nonparalytic and mildly paralytic cases was consistently greater in each 5-year age group under age 15 than in the nonvaccinated. In the entire 0 to 14 age bracket, 12% of the vaccinated patients had moderate or marked degrees of paralysis as compared to nearly 50% of the nonvaccinated patients. There were too few vaccinated patients over this age for comparison. In the vaccinated group as a whole there was no apparent difference in severity in patients who had had one inoculation and those who had had two. Among the small number of vaccinated patients under age 5, however, there was a suggestive decrease in severity between patients with one and with two inoculations.

In nonvaccinated patients, the disease tended to be most severe in the 0 to 4 age group and in young adults, aged 20 to 35. The largest number of deaths and of patients in whom a respirator was needed was among young adults. None of the vaccinated patients died or needed a respirator, but tracheotomy was necessary in 3. The concentration of mild forms of poliomyelitis in the vaccinated group is believed to indicate that partial protection was conferred by the vaccine, resulting in a shift to lesser degrees of severity. Such a shift would obscure the conversion of nonparalytic cases to inapparent infections. Follow-up examinations of 62 vaccinated and 68 nonvaccinated patients mostly in the 5 to 9 age group revealed that in both series of patients approximately 90% of the muscle groups graded as having "slight paralysis" at the time of discharge were nonparalytic on the later examination.

The Aetiology of Pituitary Tumours: The Role of Hypogonadism and Hypothyroidism. J. E. Caughey. Australasian Ann. Med. 6:93-97 (May) 1957 [Sydney, Australia].

In rats and mice partial or complete impairment of thyroid and also of gonadal function leads in time to the development of pituitary tumors. The literature contains reports of the development of basophil tumors in patients who died of myxedema. In an attempt to correlate hypothyroidism or hypogonadism with the development of pituitary tumors in human subjects the author reviewed some of Cushing's classic case records and also studied the records of 50 patients with pituitary tumors observed at Dunedin Hospital. He found no case history in which hypothyroidism appeared to be the forerunner of a pituitary adenoma, but the search for evidence of hypogonadism preceding the development of pituitary tumors proved to be more rewarding. Cushing reported 2 cases, and 4 personal cases appear to give some support to such a suggestion. In 2 of the author's 4 cases bilateral oophorectomy was followed several years later by the development of a pituitary tumor. The 2 other patients were men in whom relative hypogonadism preceded the development of pituitary tumor. It is suggested that in humans, as in rodents, the formation of some pituitary tumors may follow overactivity of gonadotrophic cells secondary to hypogonadism.

GYNECOLOGY & OBSTETRICS

Present Concepts in the Diagnosis and Management of Intraepithelial (Stage 0) Carcinoma of the Cervix Uteri. R. T. Parker, W. K. Cuyler, L. A. Kaufmann and others. North Carolina M. J. 18:261-268 (July) 1957 [Winston-Salem].

In 50,324 gynecologic patients, 294 (0.57%) intraepithelial cervical cancers and 1,030 (2.03%) invasive squamous cell cancers, and in 8,000 obstetric patients 44 (0.55%) intraepithelial and 23 (0.29%) invasive cancers of the cervix uteri were diagnosed during the past 10 years. Intraepithelial cancer was detected almost entirely by cytologic smears. The lesion has no characteristic appearance. The disease has no symptoms. The atypical and anaplastic cervical epithelium can be identified in smears obtained by a simple office procedure. These techniques provide an early signal of an otherwise usually unrecognizable stage 0 cancer lesion. Smears were done on pregnant women, on young women, and on those in the "cancer age group." Conservative management was practiced when childbearing was important. Vaginal hysterectomy with removal of a wide margin of the vaginal cuff was considered the treatment of choice when definitive therapy was indicated. The ovaries were conserved in patients under 45 years of age. Cold knife conization was the preferred method of obtaining adequate tissue for the identification or the exclusion of invasive cancer. Electrodissection was not satisfactory. Any concept for rational treatment of intraepithelial carcinoma was based on the principle that metastasis from intraepithelial carcinoma is impossible; this principle may be altered in the future. The patients who had had definitive therapy are followed at 6-month intervals or more often, if necessary, since the process of this disease has multifocal origin. The salvage rate in intraepithelial carcinoma of the cervix should be approximately 100%, when this concept in diagnosis and management is followed.

Cancer of the Cervix in Young Female Patients. R. Grattarola and L. Luciani. Tumori 43:210-218 (May-June) 1957 (In Italian) [Milan, Italy].

Late results obtained in the treatment of 150 women, 22 to 35 years of age, with carcinoma of the cervix are reported on. The patients are divided in 3 groups according to the stage of development of the disease. Thirty-eight patients presented carcinoma in the first stage. Of 16 who were operated on and received radiation therapy, 10 were alive after 5 years; of 15 who received radium therapy followed by roentgen therapy, 9 were alive after 5 years; of 7 who received radium therapy alone, only 2 were alive after 5 years. Fourteen of 48 patients with carcinoma in the second stage received radium therapy and 34 received radium therapy followed by roentgen therapy; 9 of the 14 and 23 of the 34 were still alive after 5 years. Twenty-seven of 64 patients with carcinoma in the third stage received radium therapy and 37 radium therapy followed by roentgen therapy; 4 of the 27 and 12 of the 37 were still alive after 5 years.

Metastatic Carcinoma of Ovary. J. C. Ahumada, J. L. Sardi and M. Turkieltaub. Rev. ginec. e obst. 51:625-638 (April) 1957 (In Spanish) [Rio de Janeiro].

Five hundred fifty-six women with ovarian tumors were observed at the gynecologic clinic of the University of Buenos Aires between 1928 and 1956. Of the 154 malignant tumors found, 24 were ovarian metastases. Most of the patients with ovarian metastases were between the ages of 40 and 50 years. The tumor was bilateral in 18 cases and unilateral in 5; in one case only the involved ovary remained, the other having been removed in a previous operation. The primary tumor was located in the gastrointestinal tract in 15 cases and could not be located in the remaining 9. The early symptoms, gastrointestinal or intrapelvic, were in all cases associated with marked loss of weight. In the advanced stages of the disease there were ascites, neoplastic nodules involving the peritoneum and the Douglas's sac, and cachexia. The operation consisted of panhysterectomy in 3 cases, partial adnexohysterectomy in 8, bilateral oophorectomy in 6, operative biopsy of the ovarian tumor in 5, and abdominoperineal amputation of the rectum with total hysterectomy and removal of pelvic lymph nodes in 2. Metastatic ovarian tumors are fatal, regardless of the treatment. Of the 24 patients observed by the author, 16 died a few months after the operation; the other patients were discharged in precarious condition and could not be followed up.

Full Term Abdominal Pregnancy: Report of a Case. D. Leary. North Carolina M. J. 18:286-290 (July) 1957 [Winston-Salem].

A 27-year-old Negro farm wife, para 2, gravida 3, was admitted to hospital because of vaginal bleeding in her 7th month of pregnancy, in November, 1954. Physical examination showed a gravid abdomen, with the fundus at 4 fingerbreadths below the xiphoid process, firm, and tense. The fetus was difficult to outline. Soft-tissue films revealed a fetus estimated at 7 or 7½ months' gestation lying in a breech presentation. The placenta was visualized high on the anterior uterine wall. Bleeding ceased when the patient was placed on complete bed rest. Vital signs remained stable. The fetal heart was not heard. Further examinations led to the tentative diagnosis of death in utero, perhaps due to abruption of the placenta. The patient was discharged on therapy with hematinics to await the spontaneous onset of labor. One month later the patient was readmitted with the chief complaint of constant abdominal pain and anorexia, but no nausea or vomiting. She had felt the baby move since her previous discharge. Abdominal pregnancy was considered a possibility, but with intact membranes, a living infant, and a high transverse lie, sounding the uterus or resorting to hysterography appeared unduly risky.

Abdominal exploration revealed a large fibromuscular sac with a smooth glistening surface presenting in the incision. It contained the infant and resembled a term-sized uterus, except that it was covered with venous sinuses. The wall of the sac appeared to be about 1 cm. in thickness. The omentum was attached to the upper pole with many enormously dilated arterial and venous cha nels. A male infant, weighing 7 lb. 15 oz. (3,500 Gm.) was extracted by the breech. It responded well to resuscitation. It was possible to determine, once the sac was emptied, that it arose at the left cornu of the uterus and was receiving its blood supply from the omentum at one end and from the utero-ovarian vessels at the other. The left tube could not be identified. The left ovary was found in the wall of the sac. Subtotal hysterectomy was performed, with the right tube and ovary left in situ. Blood loss was estimated at 5 liters (5,000 cc.); blood replacement was 6 liters (6,000 cc.). The patient withstood the procedure well. She was discharged in good condition on the 8th postoperative day with her infant, also in good condition. She is in good physical condition today.

This is the 11th recorded case of a full-term tubal pregnancy with a living mother and a living child. The classic method of management is to leave the placenta in situ and close the peritoneal cavity without drainage. The author believes that in rare instances, such as this one, excision is mandatory, since the placenta lies in a self-contained sac and bleeding could, therefore, not have been properly controlled in any other way.

PEDIATRICS

Shock in the Newborn Caused by Transplacental Hemorrhage from Fetus to Mother. J. G. Shiller. Pediatrics 20:7-11 (July) 1957 [Springfield, Ill.].

Shock due to transplacental hemorrhage just prior to delivery is reported in a pale, hypotonic, lethargic newborn infant. This clinical entity is postulated on the basis of the initial clinical condition of the infant, immediate elevation of the maternal serum bilirubin concentration and subsequent return to normal, immediate significant elevation of the fetal hemoglobin concentration in the maternal peripheral blood (strong evidence for antepartum transfusion of blood from fetus to mother) and subsequent return to normal, a rise in the anti-A titer over a 3-month period post partum with subsequent fall, and the presence of nucleated erythrocytes in the maternal vascular spaces. Hemolytic disease of the newborn, tentatively considered because of the incompatibility of both Rh and ABO blood groups, was ruled unlikely because of a negative Coombs test, lack of significant elevation of serum bilirubin concentration in the infant, absence of spherocytosis, and the course of the disease in the infant. Calculations with Smith's measure of "absolute hemoglobin mass" confirmed the predicted blood volume loss (greater than 40%). Infusion of Rh-positive packed erythrocytes, 20 ml. a 5% glucose in water, and 10 ml. of isotonic sodium chloride solution was followed clinically by an improvement in color, decrease in the respiratory rate, fall of the serum bilirubin concentration to 3 mg. per 100 ml., and a rise in the hemoglobin concentration to 16 Gm. per 100 ml. of blood. Replacement via simple transfusion is the treatment of choice.

Neonatal Anemia Due to Fetal Hemorrhage into the Maternal Circulation. H. H. Gunson. Pediatrics 20:3-6 (July) 1957 [Springfield, Ill.].

Occult fetal hemorrhage in utero, as distinct from a massive fetal hemorrhage immediately prior to birth, leading to shock in the newborn infant, may be clinically suspected in infants who show pallor associated with a low concentration of hemoglobin in the first day of life. The anemia is not progressive, as the infants do not develop jaundice, further differentiating it from hemolytic disease of the newborn. The diagnosis was established by detection of fetal erythrocytes in the maternal circulation by differential agglutination. Ashby counts indicated that the fetal cells persisted in the maternal circulation for approximately 80 days post partum at which time the mother developed anti-D and anti-E antibodies. This anemia, purported to be caused by fetal bleeding into the maternal circulation close to the time of birth, was well established 4 days after birth. Erythropoiesis was indicated in the slightly increased number of reticulocytes and nucleated erythroyctes in the child's peripheral blood. The blood groups of the mother and child must have certain basic differences before a differential agglutination test can detect the presence of fetal blood, this having been accomplished only twice in 5 attempts.

An Evaluation of the Flush Method for Determining Blood Pressures in Infants. A. J. Moss, W. Liebling, W. O. Austin and F. H. Adams. Pediatrics 20:53-61 (July) 1957 [Springfield, Ill.].

The principle involved in the flush technique is much the same as that introduced by Gartner in 1899, when he devised a means of measuring the digital blood pressure by applying a pneumatic cuff to the finger and employing the flush technique to determine the end-point. Observations were made on 294 normal infants from 1 day to 1 year of age and on 23 infants and children with congenital heart disease. Blood pressure measurement by the flush method is accomplished by applying a cuff to the wrist or ankle, wrapping the distal portion of the extremity snugly with an elastic bandage, raising the manometric pressure above the expected systolic pressure, removing the elastic wrapping, and gradually deflating the cuff until the blanched portion flushes, reading this as the end-point. A correlation analysis of the paired observations of the 2 teams revealed the Pearson product moment correlation coefficient to be 0.87 for the lower extremity and 0.65 for the upper, indicating a high degree of reliability of the procedure. Pressure values in the upper extremity exceeded those in the lower extremity in 75.5% of the readings. Recognition of this "reversal" of arm-leg relationship as determined by the flush technique is of prime importance in the diagnosis of coarctation of the aorta. The wrist flush readings were found to approximate the mean blood pressure more closely than either the systolic or diastolic pressures. Observations (17) on 15 infants and children in whom intra-atrial measurement was accomplished and compared with flush method determinations indicated a closer correlation of the latter values with the mean blood pressure as determined by planimetry. The use of various size cuffs (5 to 9.5 cm. in width) does not materially affect readings obtained by the flush technique.

Human Blood Chimeras: A Study of Surviving Twins. J. W. Nicholas, W. J. Jenkins and W. L. Marsh. Brit. M.J. 1:1458-1460 (June 22) 1957 [London].

Communication between the circulation of binovular twins in utero, resulting in an exchange of erythroblasts with persistence throughout life of mixed blood groups, is possible and is considered here as the only explanation for the mixed blood groups found in a pair of twins. Each of these "chimeras" has blood which is a mixture of the same two distinct types differing in ABO, MN, and Rhesus groups. Each twin has only a single Lewis group, different in each, and corresponding to that expected as regards the secretor status of each. Nuclear sexing of neutrophils shows that foreign leukocytes are present in the blood of the male twin and probably that of the female twin. The Lewis group findings confirm the demonstrations of Sneath and Sneath that the Lewis antigen belongs to the tissues and is only secondarily attached to the red blood cells.

Treatment of Measles Encephalitis with Adrenal Steroids. J. E. Allen. Pediatrics 20:87-91 (July) 1957 [Springfield, Ill.].

Appelbaum and Abler reported the complete recovery of 16 of 17 patients with measles encephalitis treated with adrenocorticotropin. The 10 patients, all children, demonstrated typical symptoms and findings of measles encephalitis with markedly disturbed sensorium and frequent convulsions. All of these patients were subjected to the exact same therapeutic dosage of cortisone, adrenocorticotropin, and antibiotics. The majority of the patients showed a rapid clinical improvement within the first 72 hours, with a clearing of the sensorium and a return of the temperature to normal levels. The remainder of the patients required 6 to 14 days for complete remission of clinical symptoms. At the time of discharge all 10 patients appeared to be without neurological sequelae. No definite conclusions are drawn from this study because of the relatively few cases studied; however, in view of the favorable results obtained, steroid therapy is advocated in treatment of measles encephalitis.

The Psychic Behavior of Infants Kept in a Nursery. P. Bertoye. Semaine hôp. Paris 33:2445-2450 (June 22) 1957 (In French) [Paris].

The records of 1,219 infants under 3 years of age admitted to a Red Cross nursery or pouponnière between February, 1952, and Dec. 31, 1956, show that, when certain precautions are observed, the psychomotor development of children whose health makes it necessary for them to have institutional care will not be adversely affected. Transient difficulties of adaptation to a new life will undoubtedly arise in the first month, but these difficulties will pass as the child becomes used to the change. Not only will no permanent new psychomotor disturbances appear, but those the child has on arrival may even be lessened or eliminated. It must be remembered that illness itself often deprives a child of family life and that in many cases parental instability or lack of intelligence makes the family atmosphere undesirable. Normal family life, however, is that which best assures a balanced development, and children in normal circumstances should never be kept in a nursery beyond the time needed for the cure or amelioration of the disease for which they are admitted.

The fact that today the psychic behavior of infants may improve during their stay in a nursery, whereas formerly it deteriorated, is due largely to the changed concept of nurseries. Once merely an institution in which children were given proper hygienic care and suitable food and in which they were protected insofar as possible from infections and contagious diseases, the nursery is now designed to serve a twofold purpose: (1) to supply these essential requirements and (2) to give the child an environment that will enable him to develop harmoniously, both intellectually and emotionally. The most important elements in securing this development are the children's nurses, who must be chosen with great care, and the creation of centers of interest, outdoors whenever possible, where the children may play and learn by experience. They should have the same nurses throughout their stay insofar as possible, and the nurses, who act as de facto mothers to the children, should not have too many children to take care of. Moreover, the children should always be cared for in the same way, because they find security in what is habitual, whereas they are surprised and often frightened by changes in procedure. Children also suffer when they are abruptly separated from their usual playmates, and they should therefore be kept as much as possible with the same companions. Finally, they should be encouraged to take part in games that will help them to overcome the apathy and fear so often characteristic of children weakened by illness.

Considerations on the Etiology of Congenital Cardiopathies. M. Gomirato Sandrucci. Minerva pediat. 9:490-503 (May 5) 1957 (In Italian) [Turin, Italy].

A statistical study of the medical history of a group of 444 children with various congenital cardiopathies and of a group of normal children revealed that congenital heart defects occurred 9 times more often in parents of the children of the first group than in the parents of normal children. The average age of the mothers of normal children was 1 year and 5 months lower than the average age of the mothers of children with noncyanotic cardiopathy and 2 years and 4 months lower than the average age of the mothers of children with cyanotic cardiopathy. Hyperemesis and attempt to commit abortion occurred 2½ and 4 times, respectively, more often among the mothers of the cardiopathic children than among the mothers of normal children. Physical trauma and psychic trauma occurred 4½ times and 2½ times, respectively, more often in cardiopathic children than in normal children. Intoxication, chronic alcoholism, and syphilis were present from 2 to 3 times more often in parents of cardiopathic children than in parents of normal children. The mothers of cardiopathic children had contracted a disease during the first 3 months of pregnancy twice as frequently than the mothers of normal children. This difference was more marked in virus diseases, acute bacterial diseases, and blood diseases. During the first 3 months of pregnancy insufficient nourishment was 10 times and lack of vitamins twice as frequent in mothers of cardiopathic children than in mothers of normal children. The author thinks that a careful obstetric, hygienic, and social prophylaxis could reduce the frequency of congenital heart disease.

Research on the Respiratory Function in Patients with Congenital Heart Disease. P. C. Gamalero. Minerva pediat. 9:529-538 (May 5) 1957 (In Italian) [Turin, Italy].

The study of the respiratory function in a group of children, 5 to 13 years old, with congenital heart disease revealed a deficient respiratory capacity that was more marked in cyanotic subjects than in the noncyanotic subjects. The author thinks that this deficiency was related to the reduced elasticity of the pulmonary parenchyma. Significant changes were not observed in the absorption of oxygen at rest; patients with cyanotic cardiopathy presented a difficulty, at times marked, in the absorption of oxygen on exertion. All patients, especially cyanotic patients, presented an increased rate of ventilation per minute both at rest and on exertion. All patients presented a low oxygen utilization coefficient and an increased oxygen ventilation equivalent. Some of the children were subjected to an operation and were reexamined 2 weeks to 3 years later. The vital capacity and maximal pulmonary ventilation had increased, the rate of ventilation per minute at rest and on exertion had decreased, absorption of oxygen under work conditions had increased, and the oxygen utilization coefficient had increased both at rest and on exertion. The author thinks that these changes were the result of the improved blood supply obtained by correcting the congenital vascular deficiency.

Toxic Effects of Isoniazid During Childhood. L. Weingärtner. Kinderärztl. Praxis 25:249-254 (June) 1957 (In German) [Leipzig, Germany].

A 10-year-old boy with an apical tuberculous lesion in the left lung was treated by bed rest and isoniazid in doses of 10 mg. per kilogram of body weight. This treatment was continued for 10 days and was then combined with aminosalicylic acid. The child's behavior during the first 5 weeks was good, after which he became obstinate, did not eat well, and often screamed without motivation. Attempts to control his restlessness with sedatives failed. Discontinuation of isoniazid therapy was at first ineffective; the boy now became aggressive, broke windows, took his bed apart, and struck at the nurse with an iron bar. He was transferred to the psychiatric department, and the drug therapy was discontinued with the result that his behavior became normal. The isoniazid was replaced by streptomycin and aminosalicylic acid. It is believed that the psychotic reaction was caused by the isoniazid.

The second patient was a 3½-year-old girl with tuberculosis of the joint between the calcaneus and the cuboid in the left foot. Isoniazid was given to her in preparation for the surgical treatment of the joint. After the operation streptomycin was instilled into the focus and was given systemically, and in addition isoniazid was given in doses of 10 mg. per kilogram of body weight. Streptomycin therapy was discontinued, and after several weeks of treatment with isoniazid the child was also given Tebethion, an acetyl-p-aminobenzaldehyde-thiosemicarbazone. After isoniazid had been given for 165 days and Tebethion for 109 days, loss of appetite was noted, the temperature rose to 39.4 C (103 F) and convulsions set in. These were followed by vomiting and loss of consciousness. Breathing was superficial and of the abdominal type; the reflexes were abolished, and the pupils were contracted and did not respond to light. The blood sugar level was below normal. Despite the intravenous administration of dextrose solution and of other fluids and stimulants the coma persisted for several days, but then the child recovered. In discussing the prevention of the toxic effects of isoniazid it is pointed out that the tolerance for the drug is reduced during infections. Certain analeptic drugs that are administered during fever also reduce the convulsive dose of isoniazid. There is a tendency to an accumulation of isoniazid in patients with nitrogen retention in the blood; therefore, the use of isoniazid is not advisable in patients with renal lesions.

Evaporated Milk in Infant Feeding. P. D. Moss. Brit. Med. J. 1:1453-1455 (June 22) 1957 [London].

Evaporated milk is considered a perfectly safe infant food, as the process of sterilization is such that a buildup of a micrococcic (staphylococcic) count is virtually impossible, final sterilization completely eliminating any live organisms or spores. Should the milk contain a toxin prior to its arrival at the processing plant, the extensive dilution in the bulking process alone is of such magnitude that the chance of gastrointestinal upset from that source is practically nil. The decision to use evaporated milk in lieu of all other infant foods rested on factors other than simple nutritional values. Evaporated milk is sterile, does not deteriorate, mixes easily (the end-product is homogeneous), does not separate out, possesses a fine soft curd, has less allergic properties, and can be used for infants of all ages. Infants changing from breast milk to evaporated milk exhibited little if any change in appearance. Evaporated milk has been used with no apparent derogatory effects in general wards for sick children, isolation wards, and outside the hospitals. No significant difference in the cost of evaporated milk and dried milk has been demonstrated.

The Occurrence of C-Reactive Protein and Its Relationship to Erythrocyte Sedimentation Rate, Weltmann's Coagulation Column, and Electrophoresis in Children with Various Diseases. M. Vest and J. Marti. Schweiz. med. Wchnschr. 87:782-787 (June 22) 1957 (In German) [Basel, Switzerland].

The amount of C-reactive protein was determined by the precipitation method in the serums of 250 children between the ages of 1 and 16 years with various diseases. Of the 250 patients, 15 had rheumatic disease, 37 tuberculosis, 51 otorhinolaryngological disease, 61 disease of the respiratory organs, 37 disease of the urinary passages, 13 disease of the liver, and 36 miscellaneous disorders. In most patients, determination of C-reactive protein as well as erythrocyte sedimentation rate, Weltmann's serum coagulation test, and paper-electrophoresis were performed several times in the course of the disease. Results showed that C-reactive protein occurs in the blood of patients with diseases which differ considerably, but particularly in that of patients with inflammatory processes. With the exception of rheumatic disorders and certain forms of tuberculosis, the C-reactive protein may, as a rule, occur mostly in the acute stage of the disease. Comparison of the results of C-reactive protein determination with those of determination of the erythrocyte sedimentation rate, and the Weltmann serum coagulation test showed parallelism insofar as the presence of C-reactive protein in the patient's serum was accompanied by an increased sedimentation rate and a "shift to the left" in the results of the Weltmann serum coagulation test. However, the C-reactive protein usually appeared earlier in the blood and normalization occurred more rapidly than was the case with the changes in sedimentation rate and Weltmann's serum coagulation test. Markedly divergent results occasionally were observed in the individual patient. Because of the different mechanisms on which these tests are based, complete correspondence of their results can not be expected in the individual patient. In the serums of the patients with a positive result of the C-reactive protein determination, the alpha-1 globulin levels were always increased and so were in most patients the alpha-2 and gamma globulin levels when compared with the controls whose serums were negative for C-reactive protein.

The determination of C-reactive protein in the serum is particularly valuable for the control of the course of rheumatic polyarthritis, endocarditis, and myocardial infarction, because the occurrence of this abnormal protein in the blood follows the pathological processes more rapidly than the slowly reacting erythrocyte sedimentation rate. In patients with other disease, the presence of C-reactive protein in the serum indicates the presence of an inflammatory or necrotic process, while the absence of C-reactive protein in the serum should not be interpreted as a sign of absence of such process or as a sign of anatomic healing. The nature of the C-reactive protein has not yet been elucidated.

Endocardial Fibroelastosis. J. Beveridge. Australasian Ann. Med. 6:155-168 (May) 1957 [Sydney, Australia].

The term endocardial fibroelastosis is synonymous with "endomyocardial fibrosis," "endomyocardial sclerosis," and "endocardial sclerosis." The term refers to a white, opaque, fibroelastic thickening of the endocardium, which frequently involves the cardiac valves. It is a not uncommon cause of fatal heart disease in infancy, but according to some earlier reports the disease is not confined to infants and children. Histories of 6 children who died from the acute and chronic forms of fibroelastosis at a children's hospital in Sydney are presented. In the acute form the symptoms are alarming. Upon the vague and nonspecific background of irritability, refusal of food, and restlessness, there develops a shock-like condition in conjunction with neck and limb stiffness, cyanosis, and respiratory distress. Death is usual in this form. In the chronic form, the clinical picture is one of congestive cardiac failure with secondary pulmonary infection. In this form cardiac murmurs are present and the electrocardiogram is grossly abnormal. Roentgenologic studies were made in all but one of the 6 children. There was evidence of cardiac enlargement, and, in addition, the films were of value in demonstrating associated or secondary pulmonary consolidation, collapse, and congestion.

Autopsy revealed in all 6 children thickening of the endocardium of the left auricle and left ventricle; in 4 the mitral valve was stenosed and in 3 the aortic valve was stenosed, whereas in only 2 was the right side of the heart the site of endocardial thickening. It is difficult to make a definite diagnosis during life, but, since in the chronic form of fibroelastosis the prognosis is probably not always fatal, awareness of this condition is important. A diagnosis of the chronic form should be entertained when symptoms of failure of the left side of the heart and evidence of failure of the right side are associated with a globular enlargement of the heart and with electrocardiographic abnormality, particularly T-wave changes in leads 1 and 2 and in the left ventricular surface leads. The author recommends digoxin for the management of congestive cardiac failure. A low-sodium diet can be achieved for even the smallest infants by replacing the usual feeding with a dried milk of low sodium content. Administration of oxygen, mercurial diuretics, mechanical aids (venesection, aspiration of hydrothoraces), and the use of antibiotics for the infective pulmonary complications have all been useful. "Poudrage," in the form of dusting sterile talc into the pericardial sac to cause an adhesive granulomatous inflammation with new vessels to anastomose with those of the myocardium, has been found effective by Paul and Robbins.

Clinical and Pathological Observations in Infants with Coarctation of the Aorta and Patent Ductus Arteriosus. D. Goldring, M. R. Behrer, W. A. Thomas and others. J. Pediat. 51:18-28 (July) 1957 [St. Louis].

Fourteen patients with coarctation of the aorta from the St. Louis Children's Hospital, who had been autopsied in the department of pathology of Washington University, were selected for study. All of these had been observed during life by at least one of the authors. Blood pressure findings, electrocardiograms, roentgenograms of the chest, clinical notes, autopsy records, and microsections of the lung were available and were reviewed. Gross specimens of hearts and aortas preserved in formalin were also available from 12 of the 14 patients. The patients ranged in age from 8 days to 8 months. All patients had coarctation of the aorta just proximal to the attachment of the ductus arteriosus, and each had one or more defects permitting shunting of blood between the systemic and the pulmonary circulation. Blood pressure determinations were made by the "flush" technique, which is accomplished by placing a pressure cuff around the wrist or ankle. The extremity is blanched by a rubber dam and the cuff inflated. The pressure is then slowly released so that the fall is about 5 mm. Hg per second and the appearance of blood flow in the blanched extremity or "flush" represents the approximate systolic pressure.

The "flush" technique for blood pressure determinations proved to be a practical, reliable aid in the diagnosis of coarctation of the aorta in young infants when a pressure gradient of 20 mm. Hg or more was present between the upper and lower extremities. Associated cardiovascular defects were found at autopsy in all of the 14 patients in this series. It is felt that this combination of defects might explain the development of congestive failure very early in life. These babies responded very poorly to medical management. Surgical correction is indicated as a lifesaving measure.

DERMATOLOGY

Treatment of Various Dermatoses with an Oral Topical and Parenteral Antipruritic. K. C. Baker. Arizona Med. 14:329-332 (June) 1957 [Phoenix].

Sandostene (1-methyl-4-amino-N′-phenyl-N′-[2 thenyl]-piperidine-tartrate), a new antihistaminic agent, was given to 225 patients with various dermatoses. The drug was administered orally in tablets containing 25 mg. of the drug, intravenously in ampuls containing 50 mg. of the drug in 10% calcium gluconogalactogluconate, or topically in the form of a lotion containing Sandostene and calcium. Of 120 patients reported on previously, 23 had neurodermatitis, 12 urticaria, 2 progressive pigmentary dermatosis (Schamberg's disease), 24 dermatitis venenata, 14 atopic eczema, 5 dermatitis medicamentosa with drug eruptions, 20 contact dermatitis, 10 eczematous and exudative seborrhea, and 10 asthma with allergic manifestations. Of these 120 patients, 57 obtained excellent results, 49 good, and 14 fair results; a pronounced antipruritic effect of the drug was observed. Of additional 105 patients, 5 had generalized seborrhea, 30 drug eruption and urticaria, 20 atopic eczema and neurodermatitis, 20 dermatitis venenata and contact dermatitis, and 30 pruritus associated with blood dyscrasias, lichen planus, diabetes mellitus, hepatitis and scabies. In the acute stage, 10 cc. of Sandostene plus calcium was given intravenously every day or every other day, supplemented with tablets of Sandostene in doses of 4 to 6 daily. If the itching persisted, topical application with the lotion was used. Of these 105 patients, 48 obtained excellent results, 40 good results, and 17 were therapeutic failures. Sandostene Spacetabs, each containing 75 mg. of Sandostene, were given to 50 patients with chronic urticaria, drug eruption, contact dermatitis, neurodermatitis, and allergic dermatitis. One tablet, 2 or 3 times daily, was given to adults, and occasionally the dose was reduced to one-half tablet twice daily. Infants and children were given Sandostene Spacetabs by crushing the tablet and adding to water and sugar. A decided therapeutic advantage of the Spacetab is that sustained therapy can be achieved over a period of from 8 to 10 hours. None of the patients complained of drug eruption, gastrointestinal disturbances, frequency in urination, insomnia, irritability or other side-effects. Sandostene with calcium given intravenously and Sandostene given orally proved more effective than corticotropin (ACTH) and cortisone in 2 patients with intractable urticaria.

UROLOGY

Total Cystectomy: Analysis of 225 Cases from the Bladder Tumor Registry. J. W. Schwartz, F. K. Mostofi, J. F. Reed and A. L. Dean. J. Urol. 78:41-53 (July) 1957 [Baltimore].

The results of treatment of 225 patients with carcinoma of the bladder by simple cystectomy were evaluated. Of these patients, 31 (14%) had papillary carcinoma, grade 2; 70 (31%) had papillary and infiltrating carcinoma, grade 2; 65 (29%) papillary and infiltrating carcinoma, grade 3; 30 (13.5%) infiltrating carcinoma grades 2 and 3; and 29 (13%) infiltrating squamous carcinoma, grades 2 and 3. Vascular invasion by tumor cells was seen in 62 patients. The ages of the patients at cystectomy ranged between 22 and 74 years; 80% were over 50. The sex preponderance in this series was on the male side in the ratio of 8:1. The major symptoms of bladder tumor were hematuria, dysuria, frequency, and urgency. Total gross hematuria was the sole symptom in 59 patients. Cystectomy was the initial therapy in 125 patients (56%). Conservative measures of various kinds were used in 100 patients (44%) before cystectomy was performed. Of these patients, 55 were treated by transurethral resection, fulguration without irradiation, or both. Open surgical procedures without irradiation were performed on 27. Radiation with or without surgical measures was used for the remaining 18 patients of this group. All these patients were treated before the introduction of radioactive isotopes. This series had an over-all 5-year survival rate of 17%. The progress in anesthesia, availability of whole blood, better understanding of blood electrolytes, and more thorough preparation of the patients will improve these survival rates.

Transrectal Needle Biopsy in the Diagnosis of Prostatic Carcinoma. M. Emanuel and E. L. Foote. J. Maine M. A. 48:234-238 (July) 1957 [Brunswick].

Fifty-one transrectal needle biopsies of the prostate were performed on 44 patients suspected of having carcinoma of the prostate. The patient was put in a sharp lithotomy position with the buttocks elevated by a sandbag. Indwelling catheter if present, was not disturbed. Anesthesia was provided by intravenous administration of thiopental sodium or thiamylal (Surital) sodium. No speculum was required. The palpating left index finger located the suspected site. The finger was then withdrawn and the tip of a Silverman needle placed on the end of the finger, which was then reintroduced into the rectum. The needle point was carefully guided to the nodule in the prostate and pushed into it directly through the rectal wall. The obdurator was removed from the needle and replaced with the 2-blade cutting piece, which was slowly pushed into the prostate as far as seemed reasonable to obtain a longer sliver (about 5 to 15 mm.). The needle itself was now pushed in deeper to complete the cutting. When the biopsy was completed, the needle was withdrawn and the rectal ampulla, which had been swabbed with benzalkonium (Zephiran) chloride solution before the procedure, was again swabbed with this solution. The patient received a broad-spectrum antibiotic orally or intramuscularly for 3 days after the procedure. No major complications were observed. Prostatic pain and tenderness occurred in a few patients for 24 to 48 hours. A few patients had a slight hematuria, increased urinary instability, or both. All patients were able to get up and walk about the same day or early next morning. Seventeen of the 51 biopsies were positive for carcinoma at first attempt, and 3 were confirmed later as positive. Thus about 40% of the total biopsies were positive. Comparison with 44 perineal needle biopsies performed on 31 patients showed that only 12 (about 27%) of these biopsies were positive.

The early lesion of carcinoma of the prostate may be impossible to detect rectally. The open method of perineal biopsy stands as the most accurate means of corroborating rectal evidence of presence of early operable carcinoma of the prostate. This method entails a major procedure and is not suited to quick screening of large numbers of patients. The perineal needle method, though quick and practical, lacks accuracy in the earlier stages of carcinoma. Forceps biopsy of the prostate directly through the incised wall under vision, simplified by introduction of a relatively nontraumatic Silverman needle directly into the suspected area of the gland through the rectal wall, requires no visualization, no speculum, and no incision into the rectal wall. It is quick, requiring only a few minutes and a minimum of facilities and equipment, and it has shown superiority over the perineal needle method. It allows direct access to the suspected area.

An Unusual Case of Ectopic Splenic Tissue Resembling a Third Testicle. D. S. Daniel. Ann. Surg. 145:960-962 (June) 1957 [Philadelphia].

A 26-year-old man believed that he had a third testis. For several weeks he had noticed discomfort and swelling of his left scrotum, with pain radiating toward his left groin. Examination revealed a normal right testis, cord, and inguinal ring. The left scrotum contained 2 firm, tender and distinct masses. Each mass appeared to be a normal testis and each possessed a separate cord which ran parallel to the other and coursed upward to the left inguinal ring. A cough impulse demonstrated an egg-sized left inguinal hernia. The left scrotal contents were explored with the patient under general anesthesia. The innermost mass appeared to be a normal left testis with a normal cord. Firmly attached to the outer border of this testis was a 2.25-by-3.5-cm. firm, solid, homogeneous, brownish-red tumor mass. The tumor and the left testis were removed. A left inguinal incision was then made, and an indirect inguinal hernia was found. The cord which was attached to the tumor mass was found attached to the lower border of a normal spleen, where it was resected. A modified Bassini herniorrhaphy was performed, and the patient was discharged in one week. Examination of the surgical specimen revealed a gonadosplenic fusion, atrophic testis adherent to splenic tissue, and a splenic tissue cord. This case of scrotal accessory spleen is believed to be the 19th such case reported.

Genital Tuberculosis in the Male: Clinical Pathology and Effect on Fertility. R. J. Veenema and J. K. Lattimer. J. Urol. 78:65-77 (July) 1957 [Baltimore].

The fertility status of 60 patients with genital tuberculosis was studied. The question whether most genital tuberculosis descends from the kidneys by contamination via the infected urine or whether it is hematogenous from the originary pulmonary or intestinal focus is not concluded. Genital tuberculosis appeared to be secondary to renal tuberculosis. Epididymal tuberculosis was secondary to prostatic tuberculosis in 34 patients, although the ductus deferens showed no thickening or nodularity of the vas in 19 of these patients. An average time interval of about 5 years between the diagnosis of pulmonary tuberculosis and the onset of genitourinary tuberculosis was found in 22 patients. A history of bone tuberculosis in addition to genitourinary tuberculosis was given by 17 patients. No time relationship could be established, since just as many patients developed bone tuberculosis after as before the genitourinary tuberculosis. The prostrate was obviously involved in 43 of the 60 patients. Dilated prostatic ducts were observed in the posterior urethra of 53 patients. Involvement of the seminal vesicles was observed in 14 patients. Most of the patients were sterile. None were impotent. Of the 40 married patients, only one has had a child since the diagnosis of genital tuberculosis was made. Absent or scanty semen was a frequent sequela to prostatic tuberculosis. The morphology of the sperm was not affected. The testes showed only moderately depressed spermatogenesis. Semen cultures were positive for tubercle bacilli in 4 patients out of 35, and 1 positive smear was obtained. Thus, the possibility of transmission of the disease through the ejaculate was demonstrated. Combined therapy with isoniazid and sodium aminosalicylic acid for a period of 2 years is at present advised for genital tuberculosis. Radical prostatovesiculectomy should be performed only in patients with intractable pain. Epididymectomy is recommendable only for lesions which show intractable secondary infection or sloughing and should be followed by one year of combined chemotherapy.

Renal Function in Prostatism. O. Olbrich, E. Woodford-Williams, R. E. Irvine and D. Webster. Lancet 1:1322-1324 (June 29) 1957 [London].

The increasing incidence of prostatism in an aging population provides an opportunity to study the effect of obstruction to the flow of urine on the renal function, particularly since the development of reliable single injection methods for the measurement of the glomerular filtration rate, renal plasma flow, and maximal tubular excretory capacity has simplified the technical problems involved. The authors studied the renal function of 60 elderly men with chronic urinary obstruction due to prostatic enlargement. They found that the glomerular filtration rate and the renal plasma flow were reduced to about half the levels found in normal young adults and to about two-thirds of the levels found in healthy aged men. When the urine was infected these levels were reduced still further. In the absence of infection, tubular function was well maintained at levels normal for healthy aged men, but when the urinary tract became infected tubular function was affected to the same degree as the glomerular filtration rate and the renal plasma flow. In 12 patients examined before and after prostatectomy, there was a highly significant increase in the renal plasma flow after operation, but there was no significant change in the glomerular filtration rate. Tubular function was much improved in the only 3 patients for whom technically satisfactory estimations were obtained. These findings are discussed in relation to experimental urinary obstruction in animals. Compression of the renal venules by increased interstitial pressure within the kidney with consequent obstruction to the renal plasma flow may be the primary mechanism.

Late Results of Nephrectomy for Tuberculosis with Preoperative and Postoperative Chemotherapy. G. Obé. Ztschr. Urol. 50:298-303 (No. 6) 1957 (In German) [Leipzig, Germany].

At the author's clinic it has been the practice since 1949 to subject patients with urogenital tuberculosis in whom nephrectomy seems indicated to a short preoperative and a prolonged postoperative course of treatment with antituberculous drugs. The preparations were used in combinations of 2, 3, or even 4 drugs. Dihydrostreptomycin in combination with other drugs was used chiefly before, during, and immediately after the operation. Later, antituberculous chemotherapy was combined with climatic therapy. The usual combination was aminosalicylic acid, thiosemicarbazone, and isoniazid. The author reviews the late results obtained in 73 patients who received preoperative and postoperative chemotherapy in connection with nephrectomy (56 patients) and ureteronephrectomy (17 patients) for urogenital or urologic tuberculosis. The short preoperative and the prolonged postoperative treatment (12 to 18 months) has greatly improved the prognosis in the surgical treatment of urogenital tuberculosis. There were no deaths in the 73 patients. Of the 55 patients in whom more than 2 years have elapsed since the operation, 45 are bacteriologically cured, but since 3 of these have bladder symptoms only 42 can be regarded as cured. Two others were free from symptoms but tubercle bacilli have still not completely disappeared from their urine. Eight other patients were not cured; they were not free from tubercle bacilli, and 3 of them had bladder symptoms. Wound healing had taken place in all patients at the time they were discharged from the hospital. Fistula formation has been rare since chemotherapy has been combined with surgery.

OPHTHALMOLOGY

Medullo-epithelioma (Dictyoma) of the Optic Nerve. A. B. Reese. Am. J. Ophth. 44:4-6 (July) 1957 [Chicago].

The author describes as an oncological oddity a case of medulloepithelioma (dictyoma) in a 4½-year-old boy. The disk of the patient's left eye was greatly swollen, the lesion manifesting itself as an enormous white globular mass with an exophthalmos of 1 to 2 mm. The eye was enucleated. Since the tumor extended to the optic foramen, the optic chiasm was exposed through a transcranial approach. As the intracranial portion did not seem to be involved, the optic nerve was severed close to the chiasm, the optic foramen opened, and the remainder of the nerve removed. Nine months later a mass was noted in the orbit and biopsy revealed a recurrent tumor. A left frontal craniotomy was performed and the tumor was found deep around the sphenoid ridge and extending through the defect in the roof of the orbit. Gross total removal of the tumor was performed by freeing it from its dural attachment and checking by frozen biopsy sections whether the dissection was beyond tumor extension. The patient received 5,200 r in air to the orbit in the following 2 months. He also received 2 doses of triethylenemelamine (1.5 mg.) intramuscularly.

The tumor replaced the optic nerve and protuded some distance toward the vitreous. The structure was that of embryonic retina with a general pattern of the primary and secondary optic vesicles. The Fontana stain brought out areas of melanin produced by the tumor cells which appeared to be the outer layer of the optic vesicles and were, thus, abortive pigment epithelium. Nine months later recurrences were noted in the bones of the orbit, and a radical resection including the bones about the orbit and the associated soft tissues was done. After 4 months, there was no evidence of recurrence.

Ocular Toxoplasmosis: Report of Cases. S. B. Forbes. Am. J. Ophth. 44:41-56 (July) 1957 [Chicago].

The authors report on 9 female and 5 male patients between the ages of 1 and 70 years in whom the diagnosis of ocular toxoplasmosis was highly presumptive. The ocular picture conformed to the characteristic pattern of the disease. Other systemic sources of uveitic infection were carefully sought, and each patient gave a positive reaction to the intracutaneous toxoplasmin test and the Sabin-Feldman dye test. In 2 patients the reaction to the dye test was positive in a titer of 1:32; in 6, 1:64; in 2, 1:126; in 1, 1:128; in 1, 1:256; in 1, 1:512 and later 1:65,536; and in 1, 1:16,384. In 8 of the 14 patients, the intracutaneous tuberculin test gave a positive result. In 6 it was followed by a negative result at a later date, and in 1 it was preceded by a negative result. Reaction to the intracutaneous brucellergen test was positive 3 times in 1 patient and once in 2 patients.

The disease was characterized by an acute flare-up in most of the patients, particularly in the posterior portion of the uvea, superimposed on the previously existing lesions. The accepted therapy for uveitis caused by Toxoplasma consisted of administration of 25 mg. of pyrimethamine (Daraprim) 3 times daily, 1 Gm. of a combined preparation of sulfathiazole and sulfadiazine (Combisul-TD) 3 times daily, local administration of 30% sodium sulamyd solution in the eye manifesting active disease, and application of sulfathiazole ointment to the eye 2 times daily with a cycloplegic in the eye on each visit at the office. In only 1 patient was it necessary to control associated mild bone marrow depression with folic acid therapy by mouth. Arrest of the infection, and in 11 of the 14 patients some improvement in vision, resulted from the treatment. The visual results in 4 patients were dramatic. The practice of using pyrimethamine and sulfadiazine in presumptive cases of chorioretinitic infection is becoming more general. The consensus seems to be emerging that treatment with smaller doses over a longer period of time is as efficacious as the more intensive treatment. Combisul is tolerated better by some patients than sulfadiazine. The question of combining steroids with these drugs for minimizing the inflammatory reaction caused by the rupture of the pseudocysts is thought-provoking. Treatment of this type should not be instituted until tests have been employed to eliminate the more common diseases causing this condition. The lessened incidence of ocular tuberculosis and brucellosis should be a helpful diagnostic factor.

Studies on the Etiology of Trachoma with Special Reference to Isolation of the Virus in Chick Embryo. T'ang Fei-Fan, Chang Hsiao-Lou, Huang Yuan-T'ung and Wang K'o-Ch'ien. Chinese M. J. 75:429-447 (June) 1957 (In English) [Peking].

After Noguchi's claim that Bacillus granulosis was the causal agent of trachoma had been discredited, a number of investigators suggested that trachoma was caused by a filtrable virus. Although trachoma had been transmitted from man to apes and monkeys, or from man to man, isolation of the virus had never been successful. The authors describe their attempts to isolate the trachoma virus in chick embryos. The specimens to be studied were freed from bacterial contamination by adding ether, merthiolate, sulfacetamide, penicillin, or streptomycin. Each specimen was then injected into 6 chick embryos that had been incubated for 6 to 8 days, 0.2 cc. of specimen being introduced by the technique of Cox into the yolk-sac. The inoculated eggs were incubated at 35 C, the temperature of the human conjunctival sac, for 10 to 14 days, during which daily observations were made.

Three strains of virus—TE8, TE55, and TE66—were isolated from 93 specimens collected from patients with early forms of trachoma. The virus is a large-sized filtrable agent appearing chiefly in the form of elementary bodies. It is readily inactivated by heat at 50 C (122 F), desiccation, phenyl mercuric nitrate, formalin, phenol, bichloride of mercury, alcohol, penicillin, terramycin, and aureomycin, but is resistant to ether, merthiolate, streptomycin, and to the process of freeze-drying and subfreezing temperature. It can be kept alive at −50 C (−58 F) for over 5 months and preserved, when lyophilized, for over 260 days; but in glycerine, it can be conserved only for a few days. It is pathogenic for chick embryos and monkeys, causing death of the former in a few days and giving rise to folliculosis in the latter in addition to congestion and thickening of the conjunctiva. In 1 of the 7 monkeys infected, typical cell inclusions were found. The virus is nonpathogenic for mice, guinea pigs, hens, and rabbits.

Ocular Manifestations of the Fuller-Albright Syndrome. J. E. Alfano. Am. J. Ophth. 44:77-87 (July) 1957 [Chicago].

The author reports on an 8-year-old boy with polyostotic fibrous dysplasia (Albright's syndrome). The syndrome is characterized by osteitis fibrosa disseminata, areas of pigmentation of the skin, and endocrine dysfunction with precocious puberty in the female. The serum calcium and phosphorus levels are within normal limits, although the alkaline phosphatase value may be elevated. The anterior view of the face of the patient showed a depression of the left globe, with prominence of the superior and lateral orbital bony margins. There was a suggestion of fulness of the left upper lid. The lateral view of the patient showed prominence of the left side of the forehead and outer aspect of the orbital margin. He complained of no loss of vision. There was some diplopia on upward gaze. He could see very well to read his books and play with the other children in the ward. External examination revealed the left eye to be displaced vertically downward. Palpation revealed some thickening of the superior lateral wall of the orbit. Pupillary reactions were normal. Vertical ocular rotation revealed a definite limitation of upward motion of the left eye.

According to Albright, the bones in the skull most commonly involved are those in the base and the inferior portions of the orbital and frontal bones. In 5 of the 7 patients reported on by Albright there was bony involvement of the orbits; in 1 of these, although no mention was made, the photograph accompanying the description of the case suggested a depression of the right globe. Another of these patients showed a marked prominence of the right side of the head with exophthalmos of the right eye and a dilated pupil. It would appear from this survey that changes in the bones of the orbit are commonly present and that displacement of the globe would depend on the stage at which the patient is seen. Polyostotic fibrous dysplasia must be differentiated from those general or systemic disorders which may produce somewhat similar changes in the skeleton and skull, including, primarily, neurofibromatosis (Recklinghausen's disease) and lipid histiocytosis of cholesterol type (Hand-Schüller-Christian disease). Less often a similar picture may result in osteitis deformans (Paget's disease) and in hyperthyroidism.

THERAPEUTICS

Maintenance of Adrenal Cortical Responsiveness During Prolonged Corticoid Therapy: Evaluation of Intermittent Administration of Repository Corticotropin Injection.

I. I. Young, V. De Filippis, F. L. Meyer and W. Q. Wolfson. A.M.A. Arch. Int. Med. 100:1-10 (July) 1957 [Chicago].

Adrenal cortical atrophy and unresponsiveness are commonly observed during and shortly after prolonged administration of adrenal cortical steroids. This state is reversible but when present renders the patient vulnerable to stress-induced acute adrenal cortical insufficiency. Sixteen patients with rheumatoid arthritis, disseminated lupus erythematosus, and bronchial asthma requiring prolonged corticoid therapy were studied in an attempt to answer the following questions: 1. Can a normal degree of adrenal cortical responsiveness be maintained by intermittent administration of repository corticotropin injection at weekly or biweekly intervals? 2. Can corticoid-induced adrenal cortical unresponsiveness be restored by intermittent administration of repository corticotropin injection?

Results of trials with combined corticoid-corticotropin therapy, i. e., administration of hydrocortisone, cortisone, or prednisone for 5 or 6 days per week, and concurrent administration of from 100 to 320 units of high-potency repository corticotropin injection (corticotropin gel) once weekly or 100 units of repository corticotropin injection twice weekly, revealed that adrenal cortical unresponsiveness will usually be prevented if individual doses of 200 units or more of repository corticotropin injection are used at weekly intervals. Adrenal cortical unresponsiveness could not be restored by the intermittent administration of large weekly doses of corticotropin during prolonged corticoid therapy. Combined corticotropin-corticoid therapy may be of value in preventing the development of stress-induced acute adrenal cortical insufficiency.

Treatment of Chronic Bronchitis and Bronchiectasis with Intravenous Tetracycline: Results as Judged by Studies of the Sputum and Tests of Pulmonary Function.

R. E. Fox, H. F. Dowling, G. A. Saxton Jr. and M. Mellody. A. M. A. Arch. Int. Med. 100:11-17 (July) 1957 [Chicago].

Seven female and 8 male patients between the ages of 15 and 69 years, 10 of whom had bronchiectasis and 5 chronic bronchitis, were treated with tetracycline given intravenously for 5 to 10 days in doses of 1 to 1.5 Gm. per day for adults and in equivalent doses on the basis of body weight for the 2 patients aged less than 19 years. Pathogenic bacteria, including H. influenzae, pneumococci, and beta-streptococci, disappeared from the sputum of every patient, although they were replaced by Micrococcus (Staphylococcus) pyogenes var. aureus in 2 patients. In one of these 2, the sputum remained purulent; it became clear in all the other patients. Tests of vital capacity, timed vital capacity, and maximum breathing capacity showed no consistent trend before and after therapy in the 10 patients with bronchiectasis. The results of these tests revealed significant improvement in the 5 patients with chronic bronchitis.

Improvement in the arterial oxygen tension and in arterial-alveolar oxygen difference was observed in 3 of 5 patients tested, indicating improved intrapulmonary gas exchange. Changes in arterial carbon dioxide tension were equivocal, indicating that no significant improvement in ventilation occurred. Untoward reactions were confined to thrombophlebitis, which subsided within a few days without complication. Intravenous tetracycline therapy improves the infectious process in chronic bronchitis and bronchiectasis, and its use is recommended in patients in whom simpler measures have failed. Long-term serial studies are needed to determine whether improvement in infection is accompanied by improved pulmonary function.

Prednisolone in the Treatment of Bronchial Asthma.

L. Rosa, G. Bergami and G. C. Cenacchi. Acta allergol. 11:81-92 (No. 2) 1957 (In English) [Copenhagen].

Observations are reported on 80 patients, 60 with acute and 20 with chronic asthma. Some were outpatients, but all presented in a severe status asthmaticus of bronchial origin with the typical clinical picture of severe bronchospasm and cough together with a typical history of bronchial asthma. Some of the patients had already been treated with corticotropin or cortisone, but none with prednisolone. Routine antiasthmatic measures including bronchodilator drugs and specific desensitization had given poor results. In the course of this study the patients were treated only with prednisolone. In patients with the acute form the prednisolone treatment was given for 10 days, with daily doses of 30 mg. for the first 2 days, then 20 mg. for 3 days, 15 mg. for 2 days, and then 10 to 15 mg. daily as a maintenance dose. In 15 of the 60 patients with acute asthma this schedule was repeated at intervals from 3 to 7 times. In 55 of the 60 patients a complete remission of the status asthmaticus was observed within 4 days.

To the 20 patients with chronic asthma initial daily doses of 20 to 30 mg. were given until marked improvement was attained; then progressively lower doses were given to the minimum capable of maintaining the improvement (from 2.5 to 15 mg. daily). The Himsworth test was performed before and after 8 days of prednisolone treatment in 20 patients. The fasting blood sugar level was slightly increased, and the insulin sensitivity was more marked, indicating increased glycogen storage. Thirty patients were studied after 8 days of prednisolone therapy. In 15 of them the urine output showed a slight but constant increase during the first 3 or 4 days, then returned to the original value on the 7th or 8th day. The extracellular water and the blood sodium and potassium measured in 10 patients showed no significant variation. Renal function was tested in 6 patients before the prednisolone treatment and on the 3rd and 8th days. On the 3rd day tubular reabsorption and glomerular filtration increased; on the 8th the glomerular filtration decreased slightly, but remained above normal. Renal plasma flow increased slightly in 2 patients. The maximum tubular excretion capacity did not vary.

Acute Renal Injuries During Treatment with Phenylbutazone. W. Scheitlin and P. Jeanneret. Schweiz. med. Wchnschr. 87:881-885 (June 29) 1957 (In German) [Basel, Switzerland].

It was realized early after the introduction of phenylbutazone that the drug frequently caused increase in weight and fluid retention and that in about 10% of the patients edema became evident. Acute renal failure with anuria is rarely observed during phenylbutazone therapy, when it is considered that the drug is used by millions of patients. The author presents observations on 3 patients of the Zürich University Medical Clinic in whom acute renal failure developed during treatment with phenylbutazone. In 1 of the patients anuria developed after he had taken 5 Gm. of phenylbutazone in 3 days, which represents a considerable overdosage. In this patient, in whom the anuria was followed at first by a gradual increase in the volume of urine and then by a sudden diuresis with polyuria, the tubular function was gradually but completely restored. It was very unlikely that this patient had had renal damage before he took the excessive dose of phenylbutazone. The other 2 patients had preexisting renal diseases. One of these had a severe vascular lesion of the kidneys with malignant hypertension. The renal function had been greatly impaired with corresponding azotemia even before 1.2 Gm. of phenylbutazone had been given in the course of 2 days. However the sudden onset of the anuria, without a preceding oliguria and with death after 23 days of complete renal blockage, is not typical of nephrosclerosis, and so it cannot be doubted that the phenylbutazone was responsible for the acute anuria.

The third patient had had 2 previous attacks of anuria during treatment with phenylbutazone, but each time diuresis started promptly after the phenylbutazone therapy was discontinued. At autopsy, 18 months after these 2 episodes, chronic pyelonephritis was found, which probably had existed for years. However, there had been no decided impairment of the renal function. This patient had readily tolerated daily doses of 400 mg. of phenylbutazone, but anuria had developed twice after 1,200 mg. of the drug given in 1 day. Five similar cases were collected from the literature. Acute renal failure during phenylbutazone therapy is probably due to toxic or allergic effects resulting chiefly in interstitial and tubular lesions. They differ from the frequently observed retention of salt and water. The blockage of the ureters by urate concrements, which is attributable to the uricosuric effect of phenylbutazone, must also be differentiated from the acute renal failure. The authors believe that, despite the rarity of acute renal failure, phenylbutazone should be avoided in patients with signs of renal damage. Patients who are being treated with phenylbutazone should be kept under constant observation.

Treatment of Ulcerative Colitis with Local Hydrocortisone Hemisuccinate Sodium. S. C. Truelove. Brit. M. J. 1:1437-1443 (June 22) 1957 [London].

Clinical remission of symptoms of ulcerative colitis after treatment by means of a rectal drip of hydrocortisone was accompanied by a much-improved sigmoidoscopic appearance. The histological appearance of biopsy specimens of the colonic mucosa did not show a corresponding improvement. The lack or absence of commensurate mucosal healing is ascribed to the preparation of hydrocortisone in a solution in 50% ethyl alcohol. This discrepancy was eliminated by using a form of hydrocortisone which is freely soluble in water, namely, hydrocortisone hemisuccinate sodium, the biological action of which is identical with that of hydrocortisone save for those modifications imparted by the greater water-solubility of the hemisuccinate. Treatment with this preparation involves 10 to 14 nightly slow-rate rectal drip administrations. Patients were seen the first and last days of treatment, at which times sigmoidoscopy was accomplished and biopsy specimens taken. Clinical response to treatment was as follows: rapid remission, 11; improved, 1; no change, 6. Some patients became symptom-free after the first treatment, clinical remission usually being quite rapid in patients showing an early favorable response. The approach to normal of colonic epthelial cells, which served as an index of tissue response, was commensurate with clinical remission when local hemisuccinate sodium was used. The number of pus cells does not show any positive correlation with clinical response, suggesting the presence of infectious elements which are not improved by hydrocortisone. Thus, the improvement in histological response is attributed solely to the free solubility of the hemisuccinate in water and its subsequent use without the disturbing presence of alcohol.

Observations of Chlorpromazine Induced Jaundice with Continued Use of the Drug. S. J. Skromak, C. J. Schreader, J. F. O'Neill and E. F. Ciccone. Am. J. M. Sc. 234:85-90 (July) 1957 [Philadelphia].

Many cases of jaundice due to chlorpromazine have been observed, in all of which medication has been discontinued during the period of jaundice and improvement observed as being due to supportive therapy. The symptomatology of chlorpromazine-induced jaundice is similar to that of extrahepatic jaundice, the icteric phase being preceded by anoxia, nausea, and vomiting and lasting from 48 hours to 3 months. Jaundice appears anywhere from 9 days to 5 weeks after the institution of therapy and is not related to drug dosage. The pathology of chlorpromazine-induced jaundice is likewise similar to extrahepatic jaundice and is referred to as primary intrahepatic cholestasis. Microscopic analysis reveals marked pigmentation of central hepatic cells, distended intracellular canaliculi, plugged bile capillaries, focal degenerative changes of the hepatic cells, and an infiltration in the portal triad area of inflammatory cells consisting of lymphocytes, mononuclear cells, and neutrophilic or eosinophilic polymorphonuclear leukocytes. In the 2 cases of chlorpromazine-induced jaundice reported herein, therapy was inadvertently continued after a lapse of only 1 and 6 days, with no deleterious effects, jaundice disappearing as completely (no recurrence) as would be expected with complete drug withdrawal. Mention is made of the disappearance of this same entity after 2 days of cortisone therapy.

Viomycin in the Treatment of Pulmonary Tuberculosis. H. Naegeli, R. Hochuli and E. Haefliger. Schweiz. med. Wchnschr. 87:873-878 (June 29) 1957 (In German) [Basel, Switzerland].

The authors used the antibiotic viomycin in 2 forms, as viomycin sulfate and as viomycin pantothenate. They report their experiences with this antibiotic in 38 patients with early and in 62 patients with late forms of pulmonary tuberculosis, the majority of whom had cavities. The average dosage was 1 Gm. twice a week. Viomycin was administered in combination with other tuberculostatic drugs. In the patients who were treated for tuberculosis for the first time or after an early recurrence, viomycin was usually combined with aminosalicylic acid, whereas in long-standing cases the viomycin was combined with aminosalicylic acid, streptomycin, or isoniazid. Roentgenologic studies revealed improvement in 34 of the 38 patients with early tuberculosis who had been treated for from 3 to 6 months and in 33 of the 62 with long-standing disease after treatment had been continued for from 3 to 12 months.

Whereas some investigators had observed poor local tolerance for viomycin, the authors found that the addition of procaine hydrochloride improved the local tolerance. Toxic damage to the kidneys was reduced by the administration of relatively small doses of viomycin. The introduction of the pantothenate of viomycin proved advantageous in several respects: it further reduced the toxic damage to the kidney, and it increased local tolerance and thereby did away with the side-effects that were produced by the local anesthetic. In view of its low toxicity in small doses and its efficacy even *in early tuberculosis*, viomycin pantothenate can often replace streptomycin therapy, and so this drug can be kept in reserve for emergencies and for antibiotic coverage during surgical therapy.

Specific Hyposensitization as a Long Term Treatment of Bronchial Asthma. E. Bruun. Acta allergol. 11:142-149 (No. 2) 1957 (In English) [Copenhagen].

The value of specific hyposensitization in asthmatic patients has been studied at the Allergy Clinic of the University of Copenhagen since 1941. On the basis of results reported earlier, the author arrived at the conclusion that specific hyposensitization must be continued for a long time to insure good results. In 1950 a continuous form of treatment was started, in which the strongest dose the patient could tolerate was given once every second or third week, for about 3 years. After 3 years the injections were generally interrupted, but the patients were kept under observation. Of the total of 600 asthmatic patients included in this study, 48 have been treated for 3 years and have been under observation for 5 years, that is, for at least 2 years after the completion of the hyposensitization treatment. At the end of this period of observation 19 patients were without symptoms, 13 almost without symptoms, and 8 were definitely improved. Five patients were not improved, and 3 had died, 2 from asthma. As a whole, the specific hyposensitization seems to offer to the asthmatic patients a better future than other forms of treatment. When patients treated with hyposensitization were compared with those who had been treated with other methods, it was found that their mortality rate as well as their invalidity rate was lower.

Prevention of Norepinephrine (Levophed) Sloughs. M. F. Bryant, *J. Y. Berben and J.* M. Howard. J. M. A. Georgia 46:336-339 (July) 1957 [Atlanta].

Norepinephrine (Levophed) has been used extensively since 1949 to prevent the hypotension associated with myocardial infarction, gram-negative bacteremia, vascular catastrophe in the central nervous system, spinal anesthesia, sympathectomy, excision of a pheochromocytoma, or adrenalectomy. Tissue slough, a not infrequent complication of continuous drip norepinephrine administration, was observed in 6 patients in a 12-month period. Experimental studies revealed that soft tissue sloughing did not occur in the absence of extravascular infiltration and that rapid subcutaneous injections of solutions containing norepinephrine did not produce necrosis of the tissues, in contradistinction to slow drip subcutaneous infusion, where tissue necrosis routinely occurred. Saline solution, procaine, papaverine, histamine, hyaluronidase, and hydrocortisone were ineffective in preventing tissue necrosis when injected into the extravasation. Regitine (10 mg. in 20 cc. of saline solution) was found to be dramatically effective in preventing soft tissue necrosis, and the injection of this agent into a "Levophed extravasation" did not produce secondary hypotension. Regitine does not interfere with the maintenance of blood pressure upon injection into an area of norepinephrine extravasation.

Hydrocortisone in Tennis Elbow: A Controlled Series. R. A. J. Baily and B. H. Brock. Proc. Roy. Soc. Med. 50:389-390 (June) 1957 [London].

While several investigators had found hydrocortisone helpful in the treatment of tennis elbow (olecranon bursitis), others had found that there was little difference in the effect of the injection of hydrocortisone or of procaine. The authors describe studies on 40 patients, who were divided into 2 random groups, A and B, by selection of alternate patients. Patients in group B were treated by the injection of 1 to 3 ml. of 2% procaine into the tender area followed by manipulation (Mills' maneuver). Patients of group A received the same treatment, but in addition they were given an injection of 25 mg. (1 ml.) of hydrocortisone acetate. The injections were given by one of the authors, whereas the other one, who was not aware of what treatment had been given, examined the patients 1 week, 3 weeks, and 2 months after treatment.

A course of physiotherapy (ionization, heat, and deep massage) was instituted in those in whom the symptoms were unchanged after 3 weeks, and 8 patients still unrelieved after 2 months were given a second injection of hydrocortisone. In the group treated with hydrocortisone 10 were cured, 4 improved, 5 unchanged, and 1 worse; whereas of those not treated with hydrocortisone 5 were cured, 5 improved, and 10 were unchanged. Tennis elbow is a self-limiting condition whose natural course is rarely longer than 18 months. Any assessment of treatment must take this time factor into consideration. The results obtained in this series confirm that hydrocortisone is effective in tennis elbow an that its action may be distinguished from the mechanical distension of tissues by fluid injection. Although relapse may occur, the use of hydrocortisone produces a higher percentage of cures than other conservative measures within a limited period of time.

PATHOLOGY

Studies on Ochronosis: I. Report of Case with Death from Ochronotic Nephrosis. J. A. Cooper and T. J. Moran. A. M. A. Arch. Path. 64:46-53 (July) 1957 [Chicago].

The clinical history and autopsy findings on a 48-year-old woman with hereditary ochronosis are presented. Ochronosis is an inborn error of phenylalanine and tyrosine intermediary metabolism. The gene controlling the degradation of homogentisic acid, a breakdown product of phenylalanine and tyrosine, is lacking. This defect results in the accumulation of homogentisic acid in the extracellular fluid, and the oxidation of homogentisic acid in the presence of alkali produces the dark urine characteristic of the disease. For some unknown reason homogentisic acid selectively localizes in cartilage, accounting for the black cartilaginous discoloration that is one of the cardinal features of ochronosis. Although the disease may not necessarily shorten life, it causes disabling arthritis and is often accompanied by severe cardiovascular disease. Ochronosis and alkaptonuria were considered synonymous terms at one time, but it is now agreed that alkaptonuria is only a symptom of ochronosis. The characteristic features of dark urine, osteoarthritis, and pigmentation of cartilage were present in the woman whose case is presented, but no differences between ochronotic pigment and melanin obtained from a pigmented nevus could be demonstrated by electron microscopy or special stains. Of the special stains employed, Lillie's Nile blue method was most useful in screening sections for presence of pigment and for differentiation of ochronotic pigment and melanin from formalin pigment and lipofuscins. Extraction and isolation of the ochronotic pigment indicated concentrations of approximately 1.1% in cartilage, 0.002% in liver, and 0.003% in kidney.

The Significance of Cell Type in Relation to the Aetiology of Lung Cancer. R. Doll, A. B. Hill and L. Kreyberg. Brit. J. Cancer 11:43-48 (March) 1957 [London].

The histological data of the lung cancer cases reported by Doll and Hill in 1952 have been re-examined to see whether the relationship then observed between lung cancer and the consumption of tobacco was characteristic of the histological type. Additional information was obtained about cases for which the histological type had not originally been reported and a proportion of the growths was reexamined by one pathologist, who was kept in ignorance of the sex and previous smoking habits of the patient. In men, a close relationship was found between the daily amount smoked and the development of squamous, large cell, and small cell carcinomas (including oat-cell and anaplastic carcinomas) but only a slight, if any, relationship with the development of other histological types—principally adenocarcinomas and bronchiolar (alveolar cell) carcinomas. The number of cases in women was small, and it was impossible to decide whether the same distinction held for them. The results accord closely with those obtained in a Norwegian series. They support the hypothesis that histological types of tumors in the same anatomic site may have a different etiology, a hypothesis which is also suported by findings in other countries.

Reticulohistocytosis (Lipoid Dermato-arthritis). R. P. Warin, C. D. Evans, M. Hewitt and others. Brit. M. J. 1:1387-1391 (June 15) 1957 [London].

The authors report 4 patients with a similar and unusual syndrome of a widespread papular and nodular eruption and multiple arthritis. Areas of bone destruction were described progressing to "concertina" deformity of the fingers. Tendon sheath swellings and patches of xanthelasma palpebrarum occurred in 2 of the cases. Histological examination of all involved tissue showed giant cells, the cytoplasm of which appeared granular and in places finely "foamy." A lipoid polypeptide complex has been demonstrated in these cells. The average age of onset was 42, with extremes of 20 and 66 years. There was no significant history. The radiological appearances show many features resembling rheumatoid arthritis, but differ in a number of ways: bone is destroyed rapidly, while the destruction of articular cartilage proceeds more slowly; there is extensive involvement of terminal interphalangeal joints; some unusual joints, such as the posterior articulations of the lumbar spine and the costotransverse joints, are affected; some bony sites other than joints are involved, e. g., connective tissue attachments on the femoral trochanters, ischial tuberosities, anterior angles of vertebral bodies, and the shafts of long bones.

Myocardial Sarcoidosis. R. A. Peacock, E. J. Lippschutz and A. Lukas. Circulation 16:67-71 (July) 1957 [New York].

Twenty-eight cases of sarcoidosis, generally regarded as a systemic disease that may involve any organ in a usually benign granulomatous process, proved by autopsy, are reviewed. One additional case in which there were Stokes-Adams attacks is presented as a case study. Twenty-six of these patients have proved myocardial involvement; in 8 of these the pericardium was also involved. In one case involvement was limited to the pericardium, and in the remaining 2 cases there was epicardial invasion. Autopsy findings in the patient with the Stokes-Adams attacks present a picture of cor pulmonale with slight hypertrophy of the right ventricular wall and distinct dilatation of the right ventricle. The endocardial lining of both ventricles was smooth except for an area just below the right semilunar valve, where section through the bundle of His revealed the endocardium and the underlying myocardium to be completely replaced by nodular tubercle-like lesions. Sections of the interventricular septum showed sarcoid lesions in the endocardium and subendocardial musculature. Other positive histological findings limited to the lungs, lymph nodes, and spleen were typical of sarcoidosis. The diagnosis of myocardial sarcoidosis has rarely been made during life. Sarcoidosis is a fairly common disease. In cases where death has been due to sarcoid, the heart was frequently involved. When death is due to direct involvement of the myocardium, it is associated with heart block and some other arrhythmia resulting in death.

Acquired Toxoplasmosis: Report of a Case with Autopsy Findings, Including a Review of Previously Reported Cases. A. D. Hooper. A. M. A. Arch. Path. 64:1-9 (July) 1957 [Chicago].

A 43-year-old white man with a long history of panhypopituitarism due to a chromophobe adenoma of the pituitary gland died of toxoplasmosis and portal cirrhosis of the liver. At autopsy pseudocysts of Toxoplasma gondii and chronic inflammatory reactions were found distributed throughout the heart, lungs, thyroid, bone marrow, retroperitoneal fat, skeletal muscle, smooth muscle of the esophagus, brain, and spinal cord. The pituitary showed fibrosis, bone formation, and recent hemorrhage. A few groups of chromophobe adenoma cells were present. There are very few instances of acquired toxoplasmosis that have been studied at autopsy. Most infections in older children and adults are subclinical, and most persons with clinical manifestations recover. The clinical manifestations are of various types and include one syndrome similar to that seen in infectious mononucleosis (lymphadenopathy and the presence of atypical lymphocytes in blood smears), another syndrome of acute encephalitis, and a third resembling the typhus-spotted fever group of diseases, in which a maculopapular rash and a high fever occur. Most of the autopsies revealed neurological involvement; in those patients without neurological involvement death has usually been due to other causes.

The data from 21 published autopsy reports of acquired toxoplasmosis in older children and adults and the case presented above are summarized in a table. The free form of T. gondii is found in body uid smears, while the proliferative form and the seudocyst are found in fixed tissue. No free forms ere seen in the bone marrow smears in this paent, but proliferative forms and pseudocysts were een in histological preparations. A pseudocyst was ound in the bone marrow smears. The complement-fixation reaction and the Sabin-Feldman dye st help establish the diagnosis. The dye test cross eacts with *Sarcocystis*, *Trichomonas vaginalis*, and *Trypanosoma cruzi*. In previous autopsies it was oted that the lesions and organisms are found iost frequently in the heart and next in the brain. They are also found fairly often in lymph nodes, ings, skin, and skeletal muscle. Fatal toxoplasmois is often associated with severe chronic liver isease.

Gliomatosis Cerebri. J. Dunn Jr. and J. W. Kernoan. A. M. A. Arch. Path. 64:82-91 (July) 1957 Chicago].

The term "*gliomatosis cerebri*" is applied to the iffuse neoplastic transformation of glial elements ithin the brain and brain stem in patients dying f brain tumor. It is a bizarre but rare type of eoplasia. Other names applied to this process inlude "diffuse glioma of the brain," "gliomatous ypertrophy," "diffuse systematic overgrowth of lial apparatus of the brain," "blastomatous type f diffuse sclerosis," "central diffuse schwannosis," erebral glioblastosis," "patchy blastomatous infilration of the central nervous system," and "astrocyoma difusum." The process has been thought to epresent a blastomatous type of malformation and o be related to some dysgenetic abnormality of the euroglial system. Others have considered it to be true neoplasia of the astrocytic type. The conroversy centers around the question of a possible elationship among Recklinghausen's disease, the entral neurinoma of Josephy, glioma of the optic ierve and pons, and certain other types of glioma hat possibly bear morphologic resemblance to the iffuse cerebral gliomatosis observed in 2 women, ged 18 and 20 respectively, presented in this aper. The lesions in these cases were considered o be examples of neoplastic transformation of the ialignant astrocytoma type.

No single site of origin could be established in ither of these patients. It would be difficult to onceive of this tumor spreading so rapidly and iffusely from a primary focus; rather, a process of idespread neoplastic transformation is suggested. The authors are of the opinion that gliomas arise rom preexisting cells by a process of dedifferentiaion or anaplasia rather than from embryonic cell ests. The very presence of diverse degrees of deifferentiation and anaplasia undoubtedly accounts or the variation and pleomorphism observed in hese lesions. The forces producing widespread eoplastic change are unknown. Perhaps some "chemical" substance is responsible, as suggested by Weil. The authors consider the absence of "immature" neuronal elements in these patients as further evidence against the embryonic-rest origin of these tumors. Like Bailey and Beiser, they found it difficult to identify immature neuronal elements and considered the nerve cells found in the midst of these gliomas as remnants of preexisting cells now located within the substance of the tumor. It must be considered that gliomatosis cerebri could arise from multicentric foci. There was no clinical evidence of any associated pathological process in either of the 2 patients. The authors feel that the occasional occurrence of such tumors in patients with Recklinghausen's disease (multiple neurofibromatosis) does not prove their invariable relationship to this disease or any other similar disorder, and the origin from Schwann's cells is not acceptable morphologically.

Value of the Assay of Certain Coagulation Factors in Ascitic Fluid: Demonstration of a Test Distinguishing Ascites of Cirrhotic Origin. Mrs. A. G. Combrisson, J. Debray and E. Housset. Presse méd. 65:1227-1228 (June 29) 1957 (In French) [Paris].

The biological characteristics of ascitic fluid were investigated in 28 patients with alcoholic cirrhosis and in 11 patients with cancer (5 ovarian, 3 pancreatic, and 3 gastric) in the hope of finding a biological test by which ascites can be shown to be either cirrhotic or neoplastic in origin. Most of the tests applied, which consisted of assays, in both blood and ascitic fluid, of the total proteins and determinations of the fibrinogen, prothrombin, proconvertine, and proaccelerine levels, supplemented by paper electrophoresis for proteins and lipids, proved valueless as aids to differential diagnosis. The one exception lay in the determination of the prothrombin level in the ascitic fluid. This level was always low, never exceeding 13%, in patients with cirrhosis, whereas it was at least 35% and usually much more in patients with cancer. This difference is far greater than any that can be attributed to errors of method. The test therefore appears to have diagnostic value, but it will have to be confirmed by the study of larger series of patients. It would also be useful to investigate the results of the test in patients with ascites due to inflammatory conditions, especially peritoneal tuberculosis.

No explanation can as yet be given for the increase in the prothrombin level in patients with ascites traceable to cancer. It is interesting to note, however, that, although it is difficult to isolate certain coagulation factors, notably prothrombin and proconvertine, from one another, the isolation seems to be brought about readily by certain disease states; in fact, many of the ascitic fluids studied were rich in prothrombin but contained only traces of proconvertine or proaccel e

BOOK REVIEWS

Biochemical Disorders in Human Disease. Edited by R. H. S. Thompson, M.A., D.M., Professor of Chemical Pathology, University of London (Guy's Hospital Medical School), London, and E. J. King, Ph.D., D.Sc., F.R.I.C., Professor of Chemical Pathology, University of London (Postgraduate Medical School). Cloth. $12.60. Pp. 843, with 121 illustrations. Academic Press, Inc., 111 Fifth Ave., New York 3; J. & A. Churchill, Ltd., 104 Gloucester Place, Portman Sq., London, W. 1, England, 1957.

This book deals with the whole gamut of human disease: gastrointestinal, hepatic and biliary, hematologic, hypertensive, renal and genitourinary, adrenal, thyroid and parathyroid, nervous, osseous, muscular, nutritional, and metabolic. British and American authors, each well known in his field, have contributed to it. The subjects are treated on an "organ basis" rather than on a chemical functional basis, which is the more prevalent custom in textbooks of this kind. Treatment of the material is thorough, well documented and critical, but at the same time practical and clinically oriented. The editors have succeeded in preserving the many advantages of multiple authorship without obvious duplications. In this age of biochemistry it is safe to predict that this new book will be eagerly accepted by scientifically minded physicians, investigators, and students of medicine as one of the best available introductions to and sources for the subject.

An Atlas of Muscle Pathology in Neuromuscular Diseases. By J. Godwin Greenfield, M.D., G. Milton Shy, M.D., Ellsworth C. Alvord, Jr., M.D., and Leonard Berg, M.D. Cloth. $9. Pp. 104, with photomicrographs by Fred H. Meiller. Williams & Wilkins Company, Mt. Royal and Guilford Aves., Baltimore 2; E. & S. Livingstone, Ltd., 16 and 17 Teviot Place, Edinburgh 1, Scotland, 1957.

This book consists essentially of an excellent collection of photographs, about half of them in color, showing the abnormalities of the microstructure of voluntary muscle in various neuromuscular diseases. The plates are arranged in 10 sets, the first set illustrating loss of cross striation, cloudy and granular changes, floccular changes, and phagocytosis. The other nine sets illustrate changes in muscle nuclei, changes in fiber size, basophilic fibers with vesicular nuclei and prominent nucleoli, ringed fibers, sarcoplasmic masses, changes in interstitial tissues (collagen and fat), leukocytic infiltrations, changes in muscle spindles and peripheral muscular nerves, and pattern of lesion. By excluding trauma, infections, and tumors from consideration, the authors were able to exhibit in greater detail and to better advantage the amazing variety of ways in which the elaborate structure of the sarcostyle can be disorganized by more strictly neuromuscular disease. Examples of such disorganization are the occurrence of aberrant nuclei singly or in chains and clumps within the fiber, aberrant fibers that appear to form rings or figures-of-eight in the primary fiber-bundles, fibers that seem to consist mainly of sarcoplasm, and solitary fibers and spindles found in masses of fat.

The second part of the book contains the relevant case histories, details of techniques and terminology, cross index of cases, bibliography, and index. Of special importance to pathologists are the remarks in the authors' summary (page 95) as to the interpretation of histological changes found in specimens of muscle. The authors have avoided such words as necrosis, degeneration, inflammation, fatty transformation, atrophy, and regeneration that imply knowledge of either mechanism or direction of change. To the medical student, a histologist has long been a professor who could look at a motionless object under the microscope, assure his class that it was a resting wandering cell, and speculate interminably on its ancestry and progeny. The authors have striven to avoid this temptation. They have also tried to avoid the bias that troubles the microscopist if he knows the clinical diagnosis. As they note in their conclusion, "If accurate observations can be made, recorded, carefully analyzed and continuously reviewed, our present ignorance and confusion will eventually be replaced by understanding." The objectiveness of this book should make it permanently valuable in a library. It is recommended to the attention of students and teachers of histology, pathology, orthopedics, neurology, and physical medicine.

Spontaneous and Habitual Abortion. By Carl T. Javert, M.D., Professor of Clinical Obstetrics and Gynecology, College of Physicians and Surgeons of Columbia University, New York City. Cloth. $11. Pp. 450, with 196 illustrations. Blakiston Division, McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36; 95 Farringdon St., London E. C. 4, England; 253 Spadina Rd., Toronto 4, Canada, 1957.

This is a much needed book because the last book on this subject was written by Taussig in 1936, and it contained little data on the pathology of spontaneous abortion. Javert is well qualified to write this book, because he has devoted 20 years to a study of specimens from 2,000 spontaneous and habitual abortions. He is an outstanding pathologist as well as a leading obstetrician and gynecologist. The book is divided into five parts entitled (1) Introduction Including Methodology and Physiology

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These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

(2) Pathology, Maternal and Fetal; (3) Clinical Obstetrics; (4) Psychosomatology; and (5) Epilogue. An extensive bibliography is included. In the 2,000 cases, the causes of vaginal bleeding were decidual hemorrhage (54.25%), abortion other than spontaneous (40.75%), placenta previa (1.75%), premature separation (1.05%), bicornuate uterus (0.55%), cervical pregnancy (0.05%), and miscellaneous conditions (1.60%). Cord complications caused more abortions than pathological ovofetuses (53 versus 35%).

Javert offers the following 10-point program: (1) preparation for marriage and parenthood, planned parenthood, and preconceptional consultation; (2) happiness through teamwork; (3) security and equanimity; (4) sexual abstinence (twin beds); (5) faith in God and praise and prayer; (6) early prenatal care; (7) adequate nutrition and high citrus diet; (8) vitamin C, P, and K supplements; (9) psychosomatic therapy, and (10) control of psychic stimuli. There is an excellent chapter on the medicolegal aspects of abortion. At the end of the book is an extensive bibliography and author index. The style holds the reader's interest. The author is an iconoclast, and this is evident throughout the book. There are numerous clear illustrations, many of which are original, based on the author's and the artists' vivid imagination. A few of these sketches are too forced. The author is to be congratulated on his accomplishment, because this book should become a classic.

The Electrocardiogram: Its Interpretation and Clinical Application. By Louis H. Sigler, M.D., F.A.C.P., F.C.C.P., Attending Cardiologist and Chief of Cardiac Clinics, Coney Island Hospital, Brooklyn. Second edition. Cloth. $8.75. Pp. 312, with 195 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; 99 Great Russell St., London, W.C.1, England, 1957.

This book was apparently designed as an introduction to electrocardiography. The sections on sinus tachycardia, pericarditis, acute cor pulmonale, the normal P wave, auricular infarction, exercise tolerance tests, and premature contractions are particularly well done. Historical background is well covered, but this seems to be at the expense of more recent work to which there are relatively few references. The format of the book, as well as appearance and reproduction of the figures, is generally satisfactory.

Certain passages, however, might be considered inaccurate. On page 64 the author refers to intrinsic and extrinsic deflections when he apparently means "intrinsicoid" and "extrinsicoid." He uses the term "compensatory pause" as referring to the pause following any premature beat. The author's statement concerning relative frequency of auricular and ventricular premature beats does not conform with data compiled from large surveys, nor are the limits of the normal P-R interval generally accepted as 0.08 to 0.20 of a second. Figure 133, purporting to show the change from left to right bundle-branch block, more likely represents right bundle-branch block with shift of pacemaker to a location arising below the atrioventricular node when complete atrioventricular block develops. In any case, precise interpretation is difficult with precordial leads not shown. On page 195 the author refers to patent ductus arteriosus as a congenital lesion that overfills the right ventricle. This is not ordinarily true. The chapter on congenital heart disease is of questionable value, offering no idea of the present status of the electrocardiogram in the diagnosis of such states.

The style of writing is not always lucid and precise. There are misplacements of emphasis; for example, in the section on abnormal P waves, where the illustrations show one nonspecifically abnormal P wave and two examples of the Wolff-Parkinson-White syndrome. The chapter on ventricular gradient describes a method for determination of this value, but does not call attention to its importance, nor indicate why one might want to determine it. On page 90 reentry is described but not named, and the term is then used on page 99 without explanation. There is much detail on the circus movement theory, and only one sentence devoted to alternate theories. It is then concluded that the circus theory is disproved. The author fails to mention bradycardia as an electrocardiographic sign of myxedema. The section on electrolyte imbalance has much more material on experimental hypercalcemia than on clinically important hypocalcemia and potassium imbalance. Conspicuously absent are illustrations of electrocardiographic alterations in electrolyte imbalance. On the whole this book does not offer any advantages over the many other elementary textbooks now available on electrocardiography.

Martius' Gynecological Operations with Emphasis on Topographic Anatomy. Translated and edited by Milton L. McCall, M.D., F.A.C.S., Professor and Head, Department of Obstetrics and Gynecology, Louisiana State University School of Medicine, New Orleans, and Karl A. Bolten, M.D. Translated from Die gynäkologischen Operationen und ihre topographisch-anatomischen Grundlagen (*seventh edition*), by Prof. Dr. med. Heinrich Martius, Director of University Clinic for Women, Göttingen (Stuttgart, Georg Thieme Verlag). [Second English edition.] Cloth. $20. Pp. 405, with 450 *illustrations* by Käthe Droysen. Little, Brown & Company, 34 Beacon St., Boston 6; J. B. Lippincott Company, 4865 Western Ave., Montreal 6, Canada, 1957.

This translation of the operative gynecology book written by one of the foremost gynecologists and teachers in the last generation is most welcome. Those who are familiar with the original German edition know the excellent qualities of the book. The German textbook was written in simple language in the author's interesting, personal style. A previous English translation was prepared under the supervision of W. A. N. Dorland in 1939. The illustrations, most of which are in color, are beautiful, accurate, and instructive. The book is divided into six sections dealing with (1) gynecologic laparotomies, (2) vaginal operations, (3) operations for urinary incontinence, (4) curettage of the uterus, (5) herniotomies, and (6) intestinal operations. The third chapter occupies 53 pages, but only half a page is devoted to treatment of fresh ureteral injuries, and nothing at all is said about fresh bladder injuries. There is a special section on drainage of the abdominal cavity with illustrations showing both abdominal and vaginal drainage. Few American gynecologists today drain the abdominal cavity. A few references are cited, and they are practically all German contributions. In spite of these minor criticisms, this book is one of the foremost contributions on gynecologic surgery in any language. The fact that the original German book is now in its seventh edition is evidence of its great popularity and usefulness. The translators are to be congratulated for having accomplished their task so well, and the publishers also deserve commendation for their part.

The Compleat Pediatrician: Practical, Diagnostic, Therapeutic and Preventive Pediatrics for the Use of General Practitioners, Pediatricians, Interns, and Medical Students. By Wilburt C. Davison, M.E., D.Sc., LL.D., James B. Duke Professor of Pediatrics, Duke University School of Medicine, Durham, N. C., and Jeana Davison Levinthal, B.A., M.D., Instructor in Pediatrics, University of Michigan School of Medicine, Ann Arbor. Seventh edition. Paper. $4.25 prepaid. 257 sections; no pagination. Duke University Press, Durham, N. C., 1957.

This new edition of a widely known reference work has been completely rewritten in collaboration with the author's daughter. Salient facts from 6,000 recent articles have been incorporated, and much that is obsolete has been deleted. As in preceding editions, this book provides a maximum of factual material in a handily transportable volume. The subject matter is carefully organized into chapters on the systems of the body plus certain special chapters. Each disease entity is considered in easily located paragraphs with emphasis on diagnosis and treatment. The index is extremely complete, and cross-references within the text are almost too abundant. Few diseases or syndromes are not at least mentioned for identification. While the emphasis is on facts, information on the trend of medical opinion is still provided—for instance, the current discarding of the concept of thymic death and the inadvisability of irradiating the thymus in young children. Though not intended as a textbook, this book is a ready source of facts on all aspects of child care. With its exhaustive lists of causes of symptoms, it should be particularly useful in problems of differential diagnosis.

Slit Lamp Gonioscopy. By George Gorin, M.D., Associate Attending Surgeon, Manhattan Eye, Ear & Throat Hospital, New York, and Adolph Posner, M.D., Associate Clinical Professor of Ophthalmology, Albert Einstein Medical College, New York. Cloth. $7. Pp. 176, with 67 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1957.

Gonioscopy, the technique of examining the angle of the anterior chamber of the eye, has only recently become a standard method of procedure. The principal value of such a visualization lies in a study of the evaluation of the state of the angle in relation to the type of glaucoma present and the type of operation that is most likely to be effective. While not indispensable as a criterion of operative indication, it is nevertheless a valuable help in certain cases.

The authors have done an excellent service in presenting in comprehensive and intelligible form the anatomy of the anterior chamber and the drainage channels, the comparative anatomy and embryology of the angle, the technique of slit-lamp gonioscopy, and the gonioscopic findings in normal and diseased eyes. Included is a short history of gonioscopy and the various methods of examination, with preference expressed for the Goldmann lens, a modern slit-lamp, and the patient in the sitting position. Although all experts in this field will not agree, logical reasons are presented for this preference. The book is timely, accurate, up-to-date, well-written, and adequately illustrated. It is recommended for the ophthalmologist who is interested in acquiring a satisfactory gonioscopic technique.

Alcoholism: Basic Aspects and Treatment. Arranged and edited by Harold E. Himwich. Symposium held under auspices of American Association for Advancement of Science in cooperation with American Psychiatric Association and American Physiological Society, presented at Atlanta, Georgia, meeting, December 27-28, 1955. Publication no. 47 of American Association for Advancement of Science. Cloth. $5.75. Pp. 212, with illustrations. The Association, 1515 Massachusetts Ave., N.W., Washington 5, D. C., 1957.

This symposium brought together a group of eminent chemists, physiologists, pharmacologists, physicians, and psychologists for a discussion of the problems of alcoholism. In the first section of this monograph, there are fundamental studies on alcohol metabolism, associated stress reactions, effects of alcohol on carbohydrate metabolism, effects of alcohol on the central nervous system, effects of vitamins, and methods for hastening the metabolism of alcohol. The second section deals with the clinical aspects of the disease, including management of the acute intoxication, comatose states, and delirium tremens and the long-range care of the alcoholic patient from the psychodynamic, sociological, and pharmacological points of view. There are several papers on the use of the newer deterrent and tranquilizing agents. Major problem areas are defined, and paths for future research are opened up. It is an encouraging report, the first of several planned, using a sound multidisciplinary approach. It should be of great value to all who are interested in either the research or clinical aspects of this disease.

Degenerative Changes in the Sternoclavicular and Acromioclavicular Joints in Various Decades. By Anthony F. DePalma, M.D., James Edward Professor and Head of Department of Orthopedic Surgery, Jefferson Medical College, Philadelphia. Publication number 309, American Lecture Series, monograph in Bannerstone Division of American Lectures in Orthopaedic Surgery. Edited by Charles Weer Goff, M.D., Associate Clinical Professor of Orthopaedic Surgery, Yale University School of Medicine, New Haven, Conn. Cloth. $5.50. Pp. 178, with 105 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 24-25 Broad St., Oxford England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1957.

This monograph demonstrates the extensive work of the author and his associates in this field. The descriptions of the degenerative changes are divided into the various decades, with a careful examination of the sternoclavicular and acromioclavicular joints. Subsequent chapters describe the microscopic changes. One section is devoted to the changes of torsion in the clavicle which result in three distinct types of acromioclavicular joint. It is interesting to note that degenerative changes appear in the acromioclavicular joint as early as the second decade, whereas these changes do not appear in the sternoclavicular joint until the third decade. The roentgenographic changes correspond in general to the gross findings. This book is interesting from a purely clinical research standpoint, but the clinical application of the changes described is discussed only briefly.

An Atlas of Cardiac Surgery. Prepared by Jorge A. Rodriguez, M.D., Assistant Professor of Surgical Anatomy and Research Associate, Department of Surgery, University of Mississippi Medical School, Jackson. Cloth. $18. Pp. 250, with illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, England, 1957.

The details of intracardiac anatomy have been minimized until recently because of their restricted academic interest; but today, with open heart surgery a reality, a knowledge of these is essential. In this volume, not only are the details of most of the standard acceptable cardiac operations shown in clearly labeled drawings, but the possible complications are given also. This fact demonstrates the thoroughness with which the author has constructed his book. Many of the unpublished "key maneuvers" to the various operations are emphasized. The section of this book entitled "Adjuvants to Cardiac Surgery" contains material that ranges in variety from technical details of instruments to the steps necessary for hypothermia and the setting up of extracorporeal circulation systems. To anyone interested in present-day cardiac surgery, this book offers a simple and complete review. The large, clear drawings are easy to follow, and represent much valuable material. This review of cardiac surgery should appeal to intern, resident, and staff alike.

Calderwood's Orthopedic Nursing. Revised by Carroll B. Larson, M.D., F.A.C.S., Professor of Orthopedic Surgery and Chairman of Department, State University of Iowa, Iowa City, and Marjorie Gould, R.N., B.S., M.S., Supervisor of Orthopedic Nursing, State University of Iowa. Fourth edition. Cloth. $5.75. Pp. 701, with 308 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1957.

This new edition was compiled for the sole purpose of giving the student a compact, definite, yet simple insight into orthopedic nursing. New procedures and the change in trends of care for the orthopedic patient are stressed. The content is broad and the descriptions and explanations are expressed in a simple but adequate manner. The illustrations are self-explanatory and should be helpful to the student nurse and also to auxiliary personnel.

The Physiology of Induced Hypothermia: Proceedings of a Symposium 28-29 October 1955. Convened by the Division of Medical Sciences, National Academy of Sciences—National Research Council with the Sponsorship of the United States Army, Navy, and Air Force. Robert D. Dripps, M.D., chairman and editor. Publication 451. Cloth. $3.50. Pp. 447, with illustrations. National Research Council, 2101 Constitution Ave., Washington 25, D. C., 1956.

This excellent symposium is organized into five main sections dealing with (1) general physicochemical and physiological considerations of hypothermia, (2) effects of hypothermia on specific systems, (3) myocardial irritability and hypothermia, (4) clinical application of induced hypothermia, and (5) techniques of inducing hypothermia. Each section is written in an authoritative fashion with extensive bibliographies, where applicable. Though this field is relatively young and rapidly changing, this book should be read by all who are interested in the subject. The authors present the material clearly and thoroughly. The reviews and discussions serve to blend the various sections into a more homogeneous mass than is usual in symposiums. This book should be of special interest to anesthesiologists, surgeons, physiologists, and pharmacologists. Various members of other medical specialties would do well to read the sections pertaining to their fields.

Pulmonary Complications of Abdominal Surgery. By Anthony R. Anscombe, M.S., F.R.C.S., Senior Lecturer in Surgery, St. George's Hospital, London. Cloth. $4. Pp. 121, with 36 illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago; Lloyd-Luke (Medical Books), Ltd., 49 Newman St., London, W.1, England, 1957.

The material for this monograph was taken from the 1955 Moynihan Prize Essay and a thesis on the effect of abdominal operations on the mechanical function of the lungs. It is a sincere piece of work and particularly worthwhile, since most of the experiments were performed by the author. Anscombe concludes that abdominal operations adversely affect the mechanical functions of the lungs by reducing the total lung capacity and maximal inspiratory and expiratory flow rates. The causes of such phenomena are discussed theoretically. Since the subject is controversial, its immediate clinical applications are questionable. The author believes that in some instances morphine in small, spaced doses may have a more beneficial effect on pulmonary function than is generally supposed. Such subjects as the influence of tight dressings, abdominal distention, hydration, early mobilization, breathing exercises, and postural drainage are discussed in an interesting manner. This book can be recommended to anyone interested in abdominal surgery.

Fluid and Electrolytes in Practice. By Harry Statland, M.D., Associate in Medicine, University of Kansas School of Medicine, Kansas City. Second edition. Cloth. $6. Pp. 229, with 31 illustrations. J. P. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; 4865 Western Ave., Montreal 6, Canada; Pitman Medical Publishing Company, Ltd., 45 New Oxford St., London, W. C. 1, England, 1957.

This second edition has been brought up to date, and minor errors have been corrected. The author handles the subject in such a way that he makes rather complex subjects easy to understand. Every medical school and hospital library should have a copy of this book. It can be recommended to all interns and residents dealing with patients in whom fluid or electrolyte problems exist. Even though other textbooks are available, the ease with which one can read this one gives it unusual value. The author is to be congratulated, primarily, because of the excellent organization, simplicity, and neatness with which the subject matter is handled. This book is divided into two parts, the first dealing with the basic principles of fluid movement and the second with the application of the basic principles to special problems. It is neatly and adequately illustrated. The paper, type, and general organization are excellent. There is a more than adequate bibliography and a good index. The section on potassium has been modified slightly in view of recent knowledge.

Surgeons All. By Harvey Graham, M.D. Foreword by Oliver St. John Gogarty. Cloth. $10. Pp. 459, with 23 illustrations. Philosophical Library, Inc., 15 E. 40th St., New York 16, 1957.

This book, which should prove interesting to both the beginning surgeon and the older surgeon who has retired and is looking back at the successes and failures in his life's work, is also an excellent introduction for the medical student, and a most interesting story for the layman who is a doctor at heart and was only prevented by circumstances from becoming professionally trained. The foreword by Gogarty is prehaps one of the best prefaces ever written to a book of this kind. The story of surgery begins in prehistoric times, develops to a surprising degree among the Egyptians, Greeks, and Romans, and then becomes lost, to be rediscovered in the Middle Ages. Some of the surgeons were wise, others foolish; some honest, others quacks; some brave, some timid; but almost all were interesting. The story is well told, and although not everyone would agree with Gogarty when he says, "This is the best book on surgery I have ever read," all should agree that it is instructive and immensely entertaining.

Mechanisms of Hypertension with a Consideration of Atherosclerosis. By Henry Alfred Schroeder, M.D., F.A.C.P., Associate Professor of Medicine and Director, Hypertension Division, Department of Internal Medicine, Washington University School of Medicine, St. Louis. Publication number 305, American Lecture Series, monograph in Bannerstone Division of American Lectures in Metabolism. Edited by S. O. Waife, M.D., F.A.C.P. Consulting editor: Paul György, M.D., Professor in Pediatrics, University of Pennsylvania Medical School, Philadelphia. Cloth. $9. Pp. 379, with 39 illustrations. Charles C Thomas, Publisher, 301-337 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1957.

Investigators rarely set forth current working hypotheses, however ingenious, in a monograph or supplement the available pertinent data with information of widely varying revelance. The result, in this case, is a complex and unusual book. It will be useful only to those who are able to evaluate critically the evidence behind the author's concepts of hypertension and atherosclerosis. He assumes these to be diseases of Western civilization and attributable in part to accumulations in certain enzyme systems of toxic trace elements, particularly cadmium. The arrangements of the bibliography and of some of the tabular material, as well as the obscurity of many sentences, indicates carelessness in editing. All in all, this is an interesting reference book, but it does little to inform the practicing physician or cardiogolist.

The Hill of Venus. By Merrill Moore. Poems of men and women reacting to, puzzled by, and suffering from love, its fulfillments and its frustrations. Cloth. $3. Pp. 71. Twayne Publishers, New York 3, 1957.

This is the newest series of poems by a Boston psychiatrist, who has a total of 14 books of "sonnets" to his credit. A few titles of individual verses best describe the contents: "I Doubt If Pullman Porters Ever Tell Each Other the Sad Stories They Know"; "She Was the Praying Mantis Sort of Wife"; and "It Was Easy to Understand: She Was Excited." No doubt some physicians will enjoy this type of reading; some of their pleasure will be derived from trying to "psychoanalyze" the author. One of the verses seems particularly appropriate:

> There *is* such a thing as trying too hard,
> And I have known people to fail because of it.

QUERIES AND MINOR NOTES

[HOPTICS

rHE EDITOR:—*Exactly what is orthoptics, and does*
e medical profession consider it as having value in
e treatment of eye deviations? *M.D., Illinois.*

his inquiry has been referred to two consultants,
se respective replies follow.—ED.

NSWER.—Orthoptics may be defined as the study
treatment of the binocular functions of vision, par-
larly the deviations of the ocular muscles. All or-
tic technicians are employed or sponsored by
thalmologists; so, the term "orthoptic" is not fa-
d by optometrists. Optometrists call their treat-
t "visual training."
phthalmologists use orthoptics to treat hetero-
ria, for diagnosis of certain types of heterotropia,
in preparation for surgery. The treatment seldom
ls to be continued for more than a few months. It
never change the angle of ocular deviation, but
the ability of the eyes to fuse binocular images.
e optometrists continue visual training for hetero-
ia several years. This becomes expensive, and the
al results are not usually as satisfactory as they
from early surgery. Ophthalmologists do not pre-
be orthoptics for myopia, asthenopia, or headache,
ss there are defects in ocular motility. Many re-
t the use of orthoptics to children, in whom fusion
ers are more adaptable and faulty habits of false
on less firmly established.

NSWER.—Orthoptics is the term applied to that part
he practice of ophthalmology which is concerned
training the individual to use his eyes correctly
efficiency and comfort. It is essentially an educa-
al process and not a form of ocular calisthenics.
as as its aim the establishment, reestablishment, or
rovement of normal binocular functions and skills.
rthoptic training is an important adjunct to the
tment of some types of eye deviations. In manifest
nt cases, its purpose is to restore normal visual
ty in amblyopia ex anopsia (loss of vision from
se), to establish normal retinal correspondence
ot present, and to develop fusion with amplitudes.
atent squint cases, relief from headaches or general
discomfort frequently results with improvement of
r fusion habits. Orthoptic training is an alternative
her to surgery nor to the prescription of glasses, but it is frequently recommended in conjunction with either or both. A functional cure will frequently insure maintenance of a cosmetic correction.

Orthoptic training should not be used indiscriminately. In general, patients for such training should be selected on the basis of the fusion status, the onset of the strabismus, the age of the patient and his physical and mental capabilities, the neuropsychological condition, and the cooperation of the patient (and parents). When indicated, orthoptic treatment should be instituted as soon as possible and particularly if there is a manifest squint. This is true regardless of the amount of the deviation. If the individual is too young for active orthoptic training, passive measures can be taken to prevent the adoption of poor visual habits.

In summary, it may be stated that orthoptic training is of definite value in the treatment of many eye deviations. It should be used with care in hypersensitive individuals and should not be employed as routine treatment in unselected cases.

DIAGNOSIS AND TREATMENT OF FILARIASIS

TO THE EDITOR:—*A 32-year-old ex-Marine contracted filariasis in 1943 while serving in the South Pacific. It is assumed that the filarial infection was produced by Wuchereria malayi, since both upper extremities are still involved, with intermittent painful episodes of edema. Please supply information regarding recent changes in the treatment of filariasis. Would such an individual be considered safe as a handler of foods supplying a large population area?*
Charles J. Rey Jr., M.D., Macon, Ga.

This inquiry has been referred to two consultants, whose respective replies follow.—ED.

ANSWER.—Assuming that nonparasitic causes have been ruled out, it would seem likely that Wuchereria malayi rather than W. bancrofti has been the culprit in the case of this ex-Marine because of the limitation of clinical manifestations to the arms. In any case, both parasites live in lymphatic vessels and tissues, and presumably the mechanism resulting in early and late lymphedema is the same for both. Early, there is lymphangitis, with pronounced cellular reaction about the adult worms. Some lymph stasis and clinically evident edema may occur, but if repeated infections are avoided and if the involved areas remain bacteria-free, these early complications are ordinarily transitory. Later, when repeated infections have occurred, when bacteria complicate the local inflammatory process in the lymphatics, or when individuals

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e answers here published have been prepared by competent authorities.
do not, however, represent the opinions of any medical or other organi-
n unless specifically so stated in the reply. Anonymous communications
ot be answered. Every letter must contain the writer's name and address,
hese will be omitted on request.

are peculiarly sensitive to the filarial parasites, the involved lymphatics may be reduced to borderline performance or become incompetent.

The patient under discussion appears to have reached the stage of borderline lymphatic competence, and it would be of interest to know whether the intermittent painful episodes of edema are related to unusual exertion, to intercurrent infections elsewhere in the body, or to incidents of allergic stress (e. g., hay fever, asthma, etc.). Avoidance or prompt attention to these factors might prevent or ameliorate the edema.

Although it is unlikely that living parasites remain, a clinical trial of diethylcarbamazine citrate (Hetrazan) might be justified, since clinical improvement has been reported after its use, even in some long-standing advanced cases. There is no reason associated with this individual's old filarial infection to feel that he would not be entirely safe as a food handler.

Answer.—The filarial worms Wuchereria bancrofti and W. malayi are classified under the tissue-inhabiting nematodes. These delicate thread-like adult worms live in the lymphatics of man. W. bancrofti usually seeks the lymphatics of the groin and affects the genitalia and lower extremities. Envolvement of the arms and mammary glands occurs more frequently in infection with W. malayi. Also, with W. malayi the infiltration with eosinophils is especially marked in the peripheral lymphoid sinuses.

Man is the definitive host. The females discharge their young in a prelarval stage called microfilariae which circulate in the blood usually at night. These microfilariae are sheathed. The intermediate host is the mosquito, with many different species, including Culex fatigans, acting as vectors. Symptoms of pain, swelling, fever, and lymphangitis appear about four months after infection and have a tendency to recur. Eosinophilia is characteristic. Some workers believe that these acute recurring attacks are caused by secondary infection, some believe that they are allergic, while others are of the opinion that they are caused directly by the worms and their by-products supplemented by the reaction of the host.

The patient described has had the infection for 14 years. It would be valuable to know whether microfilariae still circulate in the blood at night between the acute attacks, for they are seldom found during exacerbations. It might be wise to see whether the intradermal test is positive. Antigen from Dirofilaria immitis can be used. The skin test is of value too in evaluating the effectiveness of treatment.

There is no specific treatment. The following drugs are used, with the general results listed. 1. Antimony is of no value. 2. Antibiotics are ineffective except for treatment of secondary infection. 3. Aspirin in moderate doses will terminate the fever in a few hours. Some workers believe that this classic and ancient remedy is the best (Thooris: *Bull. Soc. path. exot.* 49:317, 1956). 4. Desensitization may be obtained with extract of Dirofilaria immitis. Injection of this antigen in increasing concentrations intradermally reduced number of crises by 90% in five months accord Thooris (*Bull. Soc. path. exot.* 49:317, 1956). 5. C sone has been used in the treatment of eleph according to Markell and Kerrest (*Am. J. Trop.* 4:930, 1955). These authors believe that it is effec through anti-inflammatory action. They say f "Although induration usually reappeared or incr shortly after cessation of treatment, in one patient did not occur until after a lapse of about two mo 6. Diethylcarbamazine citrate, better known in country by the trade name of Hetrazan and in E as Banocide and having the formula, 1-diethy bamyl-4-methylpiperazine dihydrogen citrate, is e tive when administered by mouth only and after m In general, the dosage during the acute phase of disease varies from 1 mg. to 2 mg. per kilogra body weight administered three times daily for 20 or more, depending on the reaction of the patient there are untoward symptoms, the drug should discontinued for a day or two. At this time antih mine drugs are of help.

In conclusion, diethylcarbamazine citrate terminate filarial fever and decrease the numbe circulating microfilariae. Many different regimens used in the administration of this drug between a attacks. The most effective dosage seems to be 50 administered one day each month for 12 month longer. This decreases the number of attacks and t intensity. The sedimentation rate and the eosin count are also reduced according to Nelson Cruikshank in "Filaria in Fiji, 1944-1955."

Filariasis is never passed directly from man to A patient who suffers from filariasis only is perf safe as a food handler.

MYOCARDIAL INFARCTION

To the Editor:—*There is an impression that tively large proportion of myocardial inf occur on the golf course, considering the sm centage of man-hours spent on that course. any available information as to whether a re high number of deaths from infarctions occu golf course? Is there any known mechanism w the violent arm motions might constrict th and in some way interfere with cardiac fill perhaps, bruise the intima of the coronaries?*

Solomon Garb, M.D., Yonkers,

Answer.—There is no scientific evidence to i inate the normal participation in golf as a predis factor in myocardial infarction or as a precip factor. As is well known, most episodes of inf occur either in the course of activities usual f individual, such as walking, driving, or playin or during sleep. It is true that a small percent infarcts are associated with physical trauma o unusually vigorous effort not customary for th vidual (which might conceivably include stre participation in golf by a person unaccustom ing it regularly), and in such cases there might be ssible relationship. Even here, it is difficult to say accuracy what portion, if any, of the blame for the k should be attributed to the trauma or effort. is likewise difficult to see how the ordinary head, and trunk motions used in the golf swing would ther than transiently increase the cardiac output perhaps in individuals with coronary atherosclero- ossibly precipitate angina. The return of venous d to the heart would be augmented. Specific in- to the coronary arteries could not occur without t trauma to the thorax, although hemorrhage into therosclerotic plaque might occur coincident with t as well as with rest.

OPLASMA INFECTION AND PREGNANCY

HE EDITOR:—*A baby that was delivered of a 19- ar-old woman died two hours after normal birth. topsy showed a marked hydrocephalus due to xoplasma infection. A test made on the mother's od about six weeks post partum was reported sitive at dilution of 1:256 or above with the Toxo- sma dye test. Are further pregnancies advised, or there a chance that this woman will have another rauterine infected child? Is any treatment indi- ted for the mother who shows no clinical evidence disease?*

aymond F. Braun, M.D., Olmsted Falls, Ohio.

is inquiry has been referred to two consultants se respective replies follow.—ED.

SWER.—Antibodies to Toxoplasma infection are d in large numbers of presumably healthy women have been discovered as late as 10 years after an tion. Authorities differ as to whether the presence high antibody titer will affect the fetus. Some even that it protects the fetus from latent Toxoplasma tion. Holmdahl (*J. Obst. & Gynaec. Brit. Emp.* 65, 1953) thinks that there is no risk to the fetus future pregnancy in being infected, no matter t phase of Toxoplasma infection the mother is in r to the pregnancy. He thinks that there is no on to advise any woman against having another nancy, either because she has borne a child with disease or because she shows a high titer. In view he above facts, no treatment of the mother is ated.

ere may have been autopsy evidence to indicate the hydrocephalus in the present case was asso- d with other lesions known to occur in infants sed to maternal Toxoplasma infection in utero, there is no statement to this effect. In the absence uch evidence there would seem to be no reason elieve that the hydrocephalus necessarily was ed by this infection.

SWER.—This unhappy clinicopathological sum- y is classic for congenital human Toxoplasma ction. It is believed that, when Toxoplasma gondii des the nonimmune pregnant woman, parasitemia occurs. From resulting focal lesions in the placenta the fetus becomes infected. The great majority of such "inapparent" infections occur in women between 18 and 30 years of age. Only rarely are early postpartum dye-test titers less than 256, and the majority give positive tests at dilutions of 1:4,096 or more. Titers fall off extremely slowly, on the average, usually being 1:64 or greater after 10 or more years of observation. Presumably this means that viable Toxoplasma organisms are still present, stimulating antibody formation.

In spite of this persistence of viable parasites in these women, the Toxoplasma organisms are apparently within cells and unable to cause parasitemia. Activation of latent infections has been postulated, but all available clinical evidence is against this concept. (Even in experimental animals prolonged administration of adrenal cortical steroids is required to induce dissemination, and even this unphysiological and artificial procedure does not cause activation in every case.) To this consultant's knowledge, there are no reports of cases of congenital Toxoplasma infection in which offspring of later pregnancies became infected.

With these considerations in mind, there would seem to be no reason related to Toxoplasma infection why this woman should not be advised to have children. Chances of a second intrauterine fetal infection are essentially zero. Assuming that careful ophthalmoscopic examination for chorioretinitis is negative and that there is no other clinical evidence of disease, no treatment is indicated for the mother. An excellent discussion of all important aspects of Toxoplasma infection is to be found in the *Annals of the New York Academy of Sciences* (64:152, 1956).

BLOOD TRANSFUSION DURING LUMBAR DISK SURGERY

TO THE EDITOR:—*Please supply information regarding the routine administration of 1 to 3 pt. of blood during excision of intervertebral cartilage (prolapsed lumbar disk). The preoperative blood cell count and hematocrit reading of the patient are normal or above normal, and he does not experience shock during surgery. However, the patient bleeds profusely, and attempt at hemostasis would greatly lengthen the operative procedure. Will the speed of the operation, and consequently the safety of the patient, be enhanced by administration of blood transfusions to a degree compensating for the inevitable hazards of transfusions?*

Ralph C. Green, M.D., Johnstown, Pa.

This inquiry has been referred to two consultants, whose respective replies follow.—ED.

ANSWER.—The routine administration of blood transfusions without adequate reasons for the administration should be discouraged. No matter how carefully the donor blood is obtained and stored, how accurately the accepted laboratory work is done on the donor blood and the recipient blood, and how expertly the administration of the blood transfusion is carried out, a certain number of transfusions will be followed with a greater or less degree of untoward reaction. The two important indications for blood transfusions during operation are to increase the circulatory blood volume and to increase the oxygen-carrying power of the blood.

In this particular instance with the patient not experiencing shock, if bleeding is sufficient to lower the volume of the circulating blood or to impair the transportation of sufficient oxygen to supply the patient's needs, the administration of sufficient blood to correct these deficiencies is in order. This consultant is very conservative in the use of blood transfusions without very good reasons for their administration.

Answer.—In surgery on a prolapsed lumbar disk (without spinal fusion), there should not be the loss of more than 300 cc. of blood in the average case and, therefore, no need for a blood transfusion. The epidural plexus of veins anterior and lateral to the dural sac is the source of most of the bleeding. These veins should be carefully packed with Cottonoid strips placed between the dura and the bone. The dura should not be opened. In positioning the patient for operation, there should be no pressure on the abdomen. Either the symphysis pubis and the chest should be supported, or one should use the kneeling position (Ecker: *Surgery*, 25:112, 1949). It is also advisable that intrathoracic pressure not be increased by the anesthetist.

Other sources of bleeding are bony edges, which may require bone wax, and vessels in ligamentous tissue, which may require electrocoagulation. It is only when bleeding is not profuse that the surgeon can clearly see what he is doing. He must be patient and take the time necessary to obtain optimal hemostasis.

INFECTIONS FROM PILLOWS

To the Editor:—*Can it be true that not only hospitals and hotels but also thousands and thousands of persons use pillows for a long period of time, satisfied with just a change of pillow slips and never realizing that the feathers may be permeated with dangerous germs left through various illnesses? Some of these germs may be even more serious than the common cold virus, such as those causing diphtheria, scarlet fever, chickenpox, and poliomyelitis. Research might well be done to determine whether germs from various diseases actually are present and whether they can multiply and live in feather pillows and feather beds. Has any work been done on infections from feathers in pillows, and has any educational program been launched concerning the renovation and sterilization of pillows?*

Joseph J. Labow, M.D., Elizabeth, N. J.

Answer.—Beyond the laundering of linen, most hostelries, general hospitals, railway sleeping cars, and others employ no routine procedure for cleansing pillows, mattresses, or bedding. Although "thorough cleaning" of such materials is recommended i minal disinfection after many contagious di "sterilization" is recommended only after sm pemphigus neonatorum, and perhaps plague (C of Communicable Diseases in Man, New York, A can Public Health Association, 1955).

No definitive epidemiologic studies have been u taken to assess any human health effect that ma sult from exposure to "public pillows." Nor has sy atic attempt been made to measure the frequen recovery of recognized pathogens from, or their sistence in, pillow ticking or pillow feathers. N theless, laboratory studies do indicate that, indep ently or in various combinations, heat, formaldeh ozone, and ultraviolet light can decrease appreci the indigenous microbes of feathers obtained f dismantled pillows. Also, machines are commerci available for "sanitizing," if not sterilizing, bed materials and upholstered furniture.

It is worth noting, however, that clinical and demiologic features of certain infectious diseases h been studied thoroughly, and in many instances relative importance of recognized modes of tr mission are well established. Perhaps the absence direct evidence in itself indicates that pillows other bedding play, at best, a minor role in the spr of infections from man to man.

PROMOTION OF FERTILITY

To the Editor:—*A 37-year-old woman who has a day cycle suffered the loss of the fetus in a th months' pregnancy one year ago. She appare ovulates, since she notes the presence of menstrual lower abdominal pain and has pre strual cramps and tension. Fifteen years ago underwent the removal of a right ovarian cyst, apparently the ovary was left partially intact. Th has been no pregnancy other than the one menti above. The patient recently had a Rubin test, the tubes were patent. She is to some extent b ered by a recurrent Trichomonas infection but Floraquin tablets for this. For some time she been taking 1 grain (60 mg.) of Proloid once d But would Cytomel be more satisfactory than P loid in promoting fertility? Would a prepar such as Stilbestrol taken orally be worth try Would estrogenic suppositories be of benefit, if so, what preparations would it be advisabl use and when should they be used?*

M.D., Tennesse

This inquiry has been referred to two consult whose respective replies follow.—Ed.

Answer.—In the particular patient mentioned there is a typical biphasic temperature chart, th would appear to be no apparent reason for the us any estrogenic drug. If the problem is one of ano tion (lack of ovulation), then again there is plausible reason that might recommend the use trogenic drugs. Although it is not the philosophy of is consultant, there are those who would recommend, there is a progestational defect, that progesterone ministered orally or parenterally might be of aid in e latter part of the cycle.

As to the use of Cytomel in the case of the infertile male, a definite place has been found for this drug a group of select problems, these mainly being wom- who have poor ovulation patterns as reflected in the e of the Farris rat hyperemia ovulation test. In this oup the drug has been found definitely efficacious women with a low or a low-normal type of meta- lic index as indicated by the protein-bound iodine the blood or the basal metabolic rate. The drug s also been observed to be useful in women with a rmal metabolic index but abnormal ovulation pat- rn. The actual observation when the drug is bene- ial is an increased hormonal response (hyperemia) the part of the rat's ovary, indicating a more normal ulation pattern. The magnitude of dosage that is ed for this particular purpose varies with the indi- lual between 12.5 and 50 mcg. a day and in rare ses amounts to even 75 mcg. per day.

ANSWER.—A woman who menstruates regularly and nilarly ovulates before most, if not all, her menses is t lacking in estrogen, and Stilbestrol will be of no nefit; if given in daily doses of even 0.2 mg., it may mporarily inhibit ovulation. If the protein-bound dine in the serum is below 4 mcg. per 100 cc., yroid medication may help. If thyroid function is rmal, it will not help. The administration of Cytomel doses of 10 mcg. per day will do no harm and eoretically may help.

AMILIAL INABILITY TO USE THUMB

THE EDITOR:—*A man, 50 years old, does not have the use of his right thumb; it is practically useless in his efforts to grasp articles or even to button his shirt. This condition seems to run in his family. An aunt on the maternal side had this disability, and his daughter, who is now 25 years of age, has developed the same condition during the past two years. Apparently the trouble starts after the age of 21 years: before that time both hands are apparently normal. There are no other symptoms or loss of muscular tone. Please supply information which might help this patient's condition.*

W. C. Browne, M.D., Curwensville, Pa.

ANSWER.—In order to evaluate this query, it would helpful to have further clinical information, par- ularly as to whether there is any atrophy involving e thenar muscles. It is assumed that in all the in- viduals concerned the weakness has involved the ght hand and that these persons have been right- anded. This consultant is not aware of any genetically etermined myopathy or muscular dystrophy which ould involve only the muscles of the thumb. imilarly, he is not aware of a genetically determined, isolated neuropathy which would primarily involve the major nerve of the thumb used in grasping functions, which would be the median nerve.

However, in this case it may be assumed that there are a partial median nerve involvement and a partial thenar muscle atrophy. If so, several etiological factors may be considered in each individual instance. There may be present a carpal tunnel syndrone with compression of the transverse carpal ligament at the wrist. This is frequently accompanied by pain and paresthesia, in addition to the weakness, and may be relieved by surgical section of this ligament. Sometimes this type of hand involvement may be secondary to prolonged use of certain tools and instruments or the constant repetition of movements causing these instruments to be held for a long time with pressure into the thenar area. This is a form of occupational neuropathy seen in carpenters, dentists, and persons who garden a lot. Another possibility is that there is a cervical rib compressing roots to the median nerve. Frequently, though, cases of partial thenar muscle atrophy occur without any known cause.

MENSTRUAL IRREGULARITIES

TO THE EDITOR:—*A 29-year-old woman has had for the past six months slightly irregular menstrual periods and spotting of several days' duration between periods. The periods are not excessive and are not painful. She has been married for five years and has one normal child, 4 years of age. The pregnancy and the delivery were not complicated. The patient has always had excellent general health, and the general physical condition is entirely normal. The cervix is slightly larger than normal, its consistency is somewhat softer than normal, and the whole cervix is a deep bluish-purple color, not much unlike a decided Chadwick sign. The discoloration extends onto the vaginal walls for about one third the length of the vagina; the remaining area of the vagina is of normal appearance. There is no erosion on the cervix and no break in the vaginal epithelium. When pressure is exerted against the cervix, it blanches, and when this pressure is released, it returns to its original color. During examination of the patient under anesthesia, there was hesitancy to grasp the cervix with a tenaculum for fear of causing excessive bleeding. What significance does this lesion have, what diagnosis is offered, and what treatment should be carried out? M.D., Montana.*

ANSWER.—The symptoms of which this patient complains, namely, slight irregularity of periods and occasional spotting between periods, are probably due to a mild endocrine disturbance and are not related to the signs found on examination. A curettage should have been done at the time the patient was examined under anesthesia so as to rule out any endometrial cause for bleeding; a curettage also has therapeutic value. If there is no indication for thyroid medication, cyclic estrogen-progesterone therapy should help to establish regular periods. In regard to the bluish discoloration of the cervix and the upper end of the vagina, which blanches on pressure, this is probably due to varicosities in this area, for which no treatment is required.

EPILEPSY

To the Editor:—*A 7-year-old boy was seen in a Jacksonian convulsion involving the right side. He soon came out of the convulsion and, after vomiting several times, seemed alert. Inasmuch as his nonfasting blood sugar level was 57 mg. per 100 cc., he was given sugar solutions in juices to be taken orally. Later the glucose tolerance (Exton-Rose) test showed a fasting blood sugar level of 43 mg. per 100 cc. After the administration of 1.75 Gm. of glucose per kilogram of body weight, the glucose tolerance test showed a blood sugar level of 95 mg. at one-half hour and of 196 mg. per 100 cc. at one hour. According to the insulin tolerance test the fasting blood sugar level was 85 mg. per 100 cc. After the administration of insulin the blood sugar level was 61.5 mg. at one-half hour, 59 mg. at one hour, 67 mg. at two hours, and 67 mg. per 100 cc. at three hours. Complete neurological and physical examinations have failed to reveal any abnormalities, and other laboratory tests have been negative. What is the probable diagnosis in this case? What further investigations should be undertaken, and what treatment should be followed?*

Robert Z. Collings Jr., M.D., Casa Grande, Ariz.

Answer.—The most probable diagnosis in this case is epilepsy. A focal convulsion, such as this patient had, is seen in so-called idiopathic epilepsy as well as in secondary epilepsy. Of course, one should always keep in mind the possibility of a brain tumor in every patient who has a convulsion, particularly those patients who present focal convulsions. It is not believed that the data presented indicate significant evidence of a hypoglycemic convulsion.

An electroencephalographic study should be performed. If this test reveals generalized abnormalities and the neurological examination fails to reveal any significant abnormalities, a diagnosis of epilepsy should be entertained, and the patient should be given anticonvulsant therapy. However, if the brain wave is normal or reveals focal abnormalities, the patient should be seen by a neurosurgeon. A pneumoencephalogram should be considered. However, normal electroencephalograms and also those with focal abnormalities are seen in the case of patients with so-called idiopathic epilepsy.

A hypocalcemic convulsion is not a significant consideration in this case but should not be ruled out. Blood calcium and phosphorus determinations should be obtained. If these additional investigations fail to reveal a cause for the seizure, the patient should be given daily anticonvulsant therapy. It is suggested that the administration of phenobarbital, 32 mg. three times a day, be started. This medication shoul continued daily for at least four years. If there sh be a recurrence of seizures, the dosage of phenob tal should be increased still higher. The dosage sh be increased to tolerance, if necessary. Other anti vulsants, such as diphenylhydantoin (Dilantin) s dium, may have to be employed, if the seizures sh recur in spite of the maximal tolerated dosage phenobarbital. Anticonvulsant medication at dosage which controlled the seizures should be c tinued for at least four years after the time of the l seizure. After this period it may be gradually w drawn over the course of the subsequent year or t years.

PARAMYOCLONUS MULTIPLEX

To the Editor:—*Is there anything new in etiolo treatment of paramyoclonus multiplex?*

E. C. Heyde, M.D., Vancouver, Wa

Answer.—Reference to articles published on t subject during the past eight years indicates that th is nothing new with respect to either the cause or treatment of paramyoclonus multiplex. In a few stances, case reports suggest that there is an as undetermined metabolic disorder. On the other h the clinical picture is seen in a variety of organic b diseases.

DELAYED BLOOD COAGULATION

To the Editor:—*Three patients have a blood co lation time (Lee-White method) which is 3 min longer than the figure given for the upper limi normal (5 to 10 minutes). They have normal bl cell counts and hemoglobin levels; also, clot ret tion is normal. Treatment has consisted of the ministration of vitamin K (Mephyton) and also cium gluconate, 15 grains (1 Gm.) twice daily. W method of approach is further recommended for treatment of the condition, and is there any spe diagnosis for the delayed coagulation?*

Jack Webb, M.D., Blytheville, Ar

Answer.—A carefully standardized test of clot time on venous blood, such as the Lee-White met supplies useful information, but it is by no mea reliable measure of hemostatic efficiency. A nor clotting time is obtained in thrombocytopenic purp mild hemophilia, mild hypoprothrombinemic sta and other bleeding diseases. In determining the p bility of a bleeding condition, a carefully taken med history, especially in regard to past bleeding epis and a physical examination are of utmost import If the patient has previously bled abnormally f minor injuries or operations or bruises easily, a s of his clotting factors is indicated. This should inc determination of prothrombin time, platelet co bleeding time, and prothrombin consumption. Tre ment will be determined by the results of these te Vitamin K is indicated only if the prothrombin significantly prolonged. Neither calcium gluconate any other salt of calcium has ever been shown influence hemostasis, and therefore they are not ommended.

INT INVOLVEMENT AND POTHYROIDISM

THE EDITOR:—*A 35-year-old man is in apparent erfect health except for a hypothyroid condition hich requires the administration of 2 grains (0.12 m.) of thyroid a day. During the past six months very joint in this patient has started "popping and rinding" as though it were full of dry sand. There as been no stiffness, soreness, redness, pain, or ther discomfort. Would moderately strenuous exer- ise, such as water skiing, be contraindicated?*

M.D., Texas.

NSWER.—Insufficient information is given to eval- e the relation of joint involvement and hypo- roidism. In this consultant's extensive experience h hypothyroid patients, the symptom of "popping l grinding" joints has not been noted. General phys- l examination and further studies, such as de- mination of the basal metabolic rate and of the ount of protein-bound iodine in the serum, are gested. There is no contraindication, as far as the roid state is concerned, to the physical exercise uired about; there may well be, however, from an hopedic viewpoint.

EATMENT OF AMEBIC HEPATITIS

THE EDITOR:—*Can emetine be given safely to a pa- ient with an old myocardial infarction? Are emetine nd chloroquine still considered the best treatment or amebic hepatitis? If there are no intestinal ymptoms, should such enteric agents as diiodohy- roxyquin (Diodoquin), oxytetracycline (Terramy- in), carbarsone, or quinacrine (Atabrine) hydrochlo- ide be added to the regimen? Is the combination of liodohydroxyquin and chloroquine a toxic one? What combination is best if dysentery is present?*

Leonard Breslaw, M.D., Los Angeles.

NSWER.—Emetine is definitely toxic to cardiac scle and can be effectively replaced by chloroquine, ich is practically nontoxic, in the case of a patient h an old myocardial infarction. Most cases of ebic hepatitis respond promptly to chloroquine. In istant cases emetine must be used. No drug besides se two is known to be effective in amebic hepatitis. ebic infection in the liver is always preceded by ection of the colon. Even though no intestinal symp- ns have been recognized and no amebas can be nd in the feces, it should be assumed that an intes- al infection exists. Diiodohydroxyquin, oxytetra- cline, or carbarsone may be used for the intestinal ection, but quinacrine is not effective. Combined use diiodohydroxyquin and chloroquine has not been ported to produce toxic manifestations.

If dysentery (i. e., bloody diarrhea) is present, oxytetracycline is probably the best all-round drug to use; adult dose is 0.5 Gm. every six hours for seven days, or less if toxic symptoms appear. This is followed by 10-day treatments with diiodohydroxyquin and carbarsone in succession. If there are symptoms or signs suggestive of amebic involvement of the liver, 0.5 Gm. of chloroquine phosphate a day is given concurrently for 14 days.

ANESTHESIA AFTER REMOVAL OF PHEOCHROMOCYTOMA

TO THE EDITOR:—*A pheochromocytoma was successfully removed from a 5-year-old boy four months ago. His blood pressure returned to normal and all his previous symptoms subsided soon after the operation. At present the resting pulse rate is 84 to 90 beats per minute. Is there any contraindication to the administration of an anesthetic for a tonsillectomy at this time?*

M. Bernard Brahdy, M.D., Mount Vernon, N. Y.

ANSWER.—The successful removal of a pheochromocytoma in this patient should remove all danger from the administration of an anesthetic in tonsillectomy. Inasmuch as some patients have been found to have bilateral or multiple pheochromocytomas which may occur in an aberrant location, it would be wise to do a provocative test to rule out a second tumor. Histamine, 0.025 mg., should be given intravenously, and the blood pressure observed carefully during the following 10 minutes. If there is no change or only a slight drop with a return to normal, this indicates good compensation and would tend to rule out the possibility of another pheochromocytoma. However, if there is a drop in blood pressure followed by a rise of 30 to 50 mm. Hg (or more) above the normal resting level, then the presence of another pheochromocytoma should be considered.

ULTRASOUND AND MENSTRUATION

TO THE EDITOR:—*A patient has been having regular ultrasonic treatments to the lumbar region for a nongynecologic condition. Treatments have been given for two months, and she has had two profuse periods since onset of therapy. Are there any reports of ultrasonic radiation causing menstrual irregularity?*

M.D., California.

ANSWER.—Insofar as can be determined, there has been no report in the literature regarding the production of menstrual irregularity after applications of ultrasonic radiation. This form of therapy is, however, primarily thermal in its action, and it does produce increase of temperature locally and increase in flow of blood. It is quite possible, therefore, that repeated applications, as described, might have produced an increase in menstrual flow. It is well known that other similar forms of deep heating of tissues may cause increase in menstrual flow, and it is to be expected that this form of heating of tissues might produce a similar effect. While no serious untoward result is likely to develop, it would probably be wise to avoid such ultrasonic treatment for three or four days prior to the expected period and during the actual period of menstrual flow.

TREATING THE UNCONSCIOUS PATIENT

To the Editor:—*When a patient who is hospitalized for the treatment of some organic illness becomes temporarily confused and uncooperative, either as a result of his organic illness or as a result of encephalopathy secondary to conditions such as uremia, hepatic failure, or alcoholism, does the attending physician have the right to forcibly administer medicaments that in his judgment are necessary for the welfare of the patient? Or must the patient be formally adjudged insane before any forcible treatment may be administered? What are the physician's actual rights and liabilities in such a case?*

Herbert J. Rosen, M.D., Dover, N. J.

Answer.—In cases of emergency where the patient is unconscious or incompetent to consent to medical treatment, the law will generally imply that, if the patient was able to rationally comprehend the situation, he would have given consent to treatment for the preservation of his own life. This is particularly true where a physician is employed by a patient who later becomes irrational because of his illness. A logical presumption would be that the initial consent to treatment by the attending physician is valid until the patient has the rational means to terminate the physician's employment.

If an attending physician fails to give necessary medication for the preservation of the life of a patient who has become temporarily incompetent, merely because the patient is uncooperative due to illness, the physician may possibly be held legally responsible for adverse results. In the opinion of this consultant, a physician, having express or implied consent, should not risk a patient's life by delaying necessary medical treatment to a patient who is temporarily incompetent and uncooperative because of his illness, until the patient is adjudged insane by a court.

TREATMENT OF OXYURIASIS

To the Editor:—*In treating oxyuriasis (Enterobius vermicularis infection), what is the limit to the number of courses of therapy that can be given with piperazine (Antepar) citrate and with methylrosaniline chloride (Gentian Violet)? How often can a course of these drugs be given, and what is the limit of the daily dose of each that can be given to adults?*

M.D., New York.

Answer.—If the courses of therapy with piperazine citrate or methylrosaniline chloride are spaced 14 days apart, they can be repeated indefinitely without ill-effect to the patient and can be given every 14 days. The limit of the daily dose of methylrosaniline which can be given to adults is 1 mg. per pound of b weight divided into three daily doses and given hour before meals for eight days. After a rest of week, the administration of the drug is repeated eight more days. This constitutes one course methylrosaniline. The limit of the daily dose of pi azine for adults is 70 mg. per pound of body w not to exceed 3.5 Gm. This can be given in a s daily dose.

DEPIGMENTATION AFTER EXPOSURE TO SUNLIGHT

To the Editor:—*It has been noted that a white-h child will often develop areas of depigmentation its face and body after exposure to the sun. Th areas are asymptomatic and occur in children have lived all their lives in hot desert areas and have never before developed these lesions. Wh the most likely diagnosis? What treatment is gested? Albert C. Merkin, M.D., Las Vegas, Nev*

Answer.—The differential diagnosis of localized l of pigment (maculas) on the face and trunk inclu four possibilities. 1. Vitiligo, which is relatively common, usually milk-white, without scaling, and pr ent usually around the eyes and mouth, in the ax and flexor aspects of the wrists, and around press points (knees, malleoli, etc.). 2. Tinea versicolor fungous disease caused by Malassezia furfur and ra present on the face. The loss of pigment is incomp and the areas are not milk-white as in vitiligo. Usu the maculas are small (1-6 mm.), associated with scales, and the diagnosis is easily established by d examination of the scales for fungus with 10% p sium hydroxide. 3. Postinflammatory depigmenta which may occur, *inter alia*, after involution psoriasis or atopic eczematous dermatitis. The d nosis is usually not difficult if a careful history is t or if the typical regional pattern and lesions psoriasis and atopic eczematous dermatitis searched for. 4. So-called furfuraceous impet sometimes called erythema streptogenes. This poorly understood and probably misnamed patter skin changes. The lesions are not caused by bac and are not a form of impetigo. The disease is espe ly common in children who tan readily and either curs during the summer months or is apparent d this period. The lesions are characterized by fine, ing, 2-5-cm. maculas on the face and more rare the trunk.

Vitiligo may be treated with 8-methoxyps (Conn: Current Therapy, Philadelphia, W. B. S ders Company, 1957). Tinea versicolor is chronic cult to cure, but may be controlled with 20% so thiosulfate solution applied once daily. Postinfla tory depigmentation usually disappears when th mary lesions are treated. Furfuraceous impetigo u responds readily to 5% ammoniated mercury oint (U. S. P.) and to antibacterial ointment, inc bacitracin and neomycin.

Vol. 165, No. 10

WASHINGTON NEWS

FROM THE WASHINGTON OFFICE OF THE AMERICAN MEDICAL ASSOCIATION

Folsom Names Committee to Study Social Security . .
Congress Urged to Vote More Money for Basic Research . .
AEC Advisory Committee Backs Continuation of Testing . .

COUNCIL TO ADVISE ON SOCIAL SECURITY PROGRAM

A special council has been appointed by Secretary Folsom to study the long-range financial position of he social security program and make recommendations.

In announcing the review, the secretary said: The social security system is a keystone in the economic security of millions of individuals and of the country as a whole. Although the system is in sound condition, it should be reviewed periodically by the most competent authorities to make sure that it continues to operate on the soundest possible basis over the years ahead, and that the income will always be sufficient to pay the benefits provided by law."

The council will review the status of the Old Age and Survivors' Insurance Fund and the newer Disability Insurance Trust Fund in relation to long-term obligations. It will also consider the tax increases scheduled for 1965, 1970, and 1975 and may look into new proposals (such as the one for free hospitalization of those 65 and over), although the committee's instructions from Congress do not mention investigation of proposed changes. Congress provided for the committee in the 1956 social security amendments.

At a news conference devoted mainly to social security Secretary Folsom was asked if his Department of Health, Education, and Welfare had a position on the Forand bill (for hospitalization of the aged). Mr. Folsom replied that the department had no position on it but that "in a general way we are concerned with not getting payroll taxes to too high a level. Now these taxes are scheduled to reach 4¼% for both employer and employee and 6⅜% for the self-employed by 1975. Also, remember these taxes are on gross earnings, with no deductions (as for income taxes)."

A statement by the Social Security Administration, released at the news conference, explained the present status of the OASI trust fund. It said that income has exceeded outgo every year since the program was started in 1937 but that the percentage of excess had been declining in recent years, as expected. For 1954 the fund increased by 1.8 billion dollars, for 1955 by 1 billion dollars, for 1956 by 856 million dollars. The calendar year 1957 increase is estimated at around 100 million dollars, with the fund's total at the end of the year estimated at 22.6 billion dollars. In 1958 the fund may increase or decrease slightly, but in 1959 the prospects are for a definite decline. Then a rise will start in 1960 because of the tax increase.

Currently expenditures are somewhat higher than originally estimated. These include money going out for more self-employed farmers than anticipated would file, and for more women between the ages of 62 and 65. However, OASI says the farmer increase results from a backlog of cases, and that the situation will not recur. Likewise, the expectation is that the higher percentage of women filing will have no long-range effect on the fund, as they receive less per month than they would had they waited to age 65 to file.

The OASI statement summarizes the fund's status this way:

"The earlier-than-expected temporary halt in the anticipated future growth of the trust fund will have no significant effect on the long-run actuarial balance of the system. Moreover, there is nothing in recent experience under the old-age and survivors' insurance program which suggests the need for changes in the present contribution schedule in order to assure the continued financial soundness of the system."

The council held its organization meeting in Washington, D. C., late in October. Representing employers on it are Elliott V. Bell, editor of *Business Week;* Reinhard A. Hohaus of Metropolitan Life Insurance Co.; Robert A. Hornby, Pacific Lighting Corp. Employee representatives are: Joseph William Childs, United Rubber, Cork, Linoleum & Plastics Workers; Nelson H. Cruikshank, AFL-CIO; and Eric Peterson, International Association of Machinists. Representing the public and the self-employed are J. Douglas Brown, Princeton; Arthur F. Burn, former head of President Eisenhower's council of economic advisers; Carl H. Fisher, University of Michigan; Thomas N. Hurd, Cornell; Robert McAllister Lloyd, Teacher Insurance and Annuity Association; and Malcolm H. Bryan, head of the Atlanta Federal Reserve Bank.

SPEAKER AT MILITARY SURGEONS MEETING URGES MORE MONEY FOR BASIC RESEARCH

The president of a large pharmaceutical company believes Congress needs to appropriate more for basic research in medicine rather than engaging in what he described as a "shell game." Addressing the annual convention of the Association of Military Surgeons, John T. Connor, head of Merck & Co., said Congress sometimes appropriates money for what it says is a program directed to the "conquest of a specific disease, when, in fact, the appropriation is to support a basic research program that may or may not have an end result."

Mr. Connor said the medical schools and other research institutions are being forced to go along with what amounts to "a fifth of a billion dollar wink" in order to be able to carry on basic research within the limits imposed by the Congress. "Let's stop playing a shell game with basic research in the medical and related biological and chemical sciences. . . . Let's change the obsolete method of appropriations under which basic research vital to the country can get adequate funds only by subterfuge."

Mr. Connor said a "new era in medical research" began 18 months ago when "Congress decided that it would henceforth be the policy of the United States to try to conquer disease through research whatever the cost." Congress backed this decision, he noted, by nearly doubling the appropriations for the National Institutes of Health to 183 million dollars and boosted it again this year to 211 million dollars. This was "a development of the first magnitude. It may significantly change the lives of most of us."

Major Gen. Silas B. Hays, surgeon general of the Army, reported to the convention on the federal government's various intern and residency training programs. He commented: "The continuation of these programs are providing the various federal services with a body of professional experts in whom the civilian profession may place added confidence, not only in the care of military patients but to furnish medical leadership in time of national emergency."

The Navy is training 200 interns and residents in 14 naval hospitals; the Air Force, 139 interns in Air Force, Army, and civilian teaching centers; the Army, 164 interns in nine Army centers; the Public Health Service, 88 in seven of its hospitals, and Veterans Administration, 89 in six VA installations.

The association presented the following awards: Sir Henry Wellcome medal and prize to Capt. William W. Ayres, Armed Forces Institute of Pathology; Gorgas medal, Col. John Paul Stapp, Aero Medical Field Laboratory; Major Louis Seaman prize, Miss Ruth Adams, Veterans Administration nursing service; Stitt award, Brig. Gen. Carl W. Tempel, Army Valley Forge Hospital; McLester award, Miss Edith A. Jones, Public Health Service dietitian; Founders medal, Major Gen. Paul I. Robinson, Office of the Army Surgeon General.

REPORT ON PREVALENCE OF TUBERCULOSIS

The only official nationwide survey on prevalence of tuberculosis in five years shows a 30% decline in active cases, but the picture it presents is not entirely reassuring. The survey was conducted by the Public Health Service and the National Tuberculosis Association and will be reported on in detail in publications of the two organizations.

On the negative side were these findings:

Despite intensive efforts for control, almost 40% of the active cases are unknown to health authorities, and these people are receiving no special care. "Unknown" cases are estimated from the number of previously undiscovered cases that are found in x-ray surveys.

In the five years there has been no decrease in the number of persons—one out of 85—who were ill or had been ill with tuberculosis.

There are still about 250,000 persons in the United States known to have tuberculosis in its active form.

However, active cases have dropped from 350,000 in the five years to the 250,000, and inactive cases requiring supervision by health departments from 600,000 to 550,000.

PAN AMERICAN HEALTH BUDGET APPROVED FOR 1958

The Pan American Sanitary Bureau will supervise some 160 health programs. This was decided on at a meeting of the council of the Pan American Sanitary Organization in Washington, D. C. The United States share of the budget will be about 2 million dollars or two-thirds of the total.

Additional funds also will be available from the World Health Organization and from the Unite Nations Technical Assistance Fund. The council, i addition to approving the basic amount of 3 millio dollars, noted a tentative proposal for a 1959 budg amounting to 4 million dollars.

A major project of the bureau continues to b malaria eradication, and a special fund for thi purpose now has reached $2,300,000, of which th U. S. has contributed $1,500,000. A summary repo of the council observes: "According to present plar of the various governments it is expected th malaria will be eradicated in most of the countri of the western hemisphere within the next five year and that the American continent will be entirel free of this ancient enemy in a foreseeable future.

The bureau said public health programs during the coming year can be broken down into fou general areas:

1. Eradication programs, with malaria heading the list followed by eradication of the Aedes aegypti mosquito, the urban carrier of yellow fever.
2. Prevention or control of other communicable diseases such as tuberculosis, leprosy, poliomyelitis, and influenza.
3. Strengthening of national health services, with greatest emphasis on development of plans.
4. New activities in the field of public health such as chronic disease control, occupational health, food and drug services, and nuclear energy in relation to public health.

PERSONNEL

Three new members have been appointed to the National Advisory Arthritis and Metabolic Disease Council—Dr. William Dodd Robinson of the University of Michigan School of Medicine; Dr. Robert H. Williams, professor and executive officer, University of Washington's department of medicin and Dr. Henry Bearden Mulholland of the Univ sity of Virginia School of Medicine. The coun advises the surgeon general of the PHS and t arthritis and metabolic disease institute on resea grants.

THE JOURNAL

OF THE

American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 165, NO. 10

CHICAGO, ILLINOIS

NOVEMBER 9, 1957

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BRONCHITIS AND EMPHYSEMA

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and
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Bronchitis proper is a distinct entity from emphysema. Causal relationship between them is exceptional rather than usual. Severe bronchitis and diffuse pulmonary emphysema are to a large extent incompatible. Simple chronic bronchitis is a common trivial disease of the central tracheobronchial tree. Emphysema usually associated with bronchiolitis results from impaired function of the finer structures of the lungs. This constitutes an ominous clinical picture for the patient and now appears to be rising in incidence. Complete understanding of emphysema with bronchiolitis awaits further investigation of the mechanical, nervous, and circulatory factors involved in the functions of the bronchioalveolar structures.

RECENT literature indicates a remarkable rise in incidence as well as mortality from so-called chronic bronchitis. The figures cited by Oswald[1] disclosed in England a yearly death rate of 30,000, compared with 21,000 deaths from pneumonia, 16,000 from cancer, and 8,000 from tuberculosis. English writers, adhering to the term "chronic bronchitis," are obviously not referring to the time-honored clinical entity of that name but rather to the combination of bronchitis and emphysema. But from their writings the question has naturally arisen as to why "bronchitis" should prove so formidable a disease. American writers, looking upon chronic bronchitis as a diagnosis to be shunned, described the same combined clinical picture as "pulmonary emphysema." It is quite apparent that both are referring to the same disease, namely, bronchitis with emphysema. Regarding the nature and origins of this combination, great confusion exists.

This clinical picture has remained problematical since Laennec proposed his concept of obstructive bronchitis leading to obstructive emphysema. The mechanistic interpretation of the interrelationship of bronchitis and emphysema is responsible for the present confusion and for the fact that the old unsolved problem has now again been brought into sharp focus. We wish, therefore, to present our concepts derived from personal observations over many years. These, we believe, lead to a better understanding of the clinical picture under discussion and afford a reasonable way out of the present confusion.

Factors Predisposing to Clinical Picture

We all have observed many patients with chronic bronchitis, with a long-standing history of cough and expectoration, who are really indulging themselves in these symptoms rather than suffering from the disease. These patients cough and expectorate for many years without ever developing emphysema. They are seen much more frequently today because of the use of antibiotics that help to avoid the more serious pneumonitic episodes. There are other pa-

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Read before the Section on Diseases of the Chest at the 106th Annual Meeting of the American Medical Association, New York, June 4, 1957.

tients, fewer in number, who have had a similar long-standing history of bronchitis and who have only recently developed the clinical symptoms of emphysema. And there are yet others who develop emphysema rather quickly after brief periods of bronchitis.

The real problem still confronting us is why patients develop pulmonary emphysema at all. Today hereditary and environmental factors are being constantly stressed as predisposing to the evolution of this clinical picture. Likewise, toxic air pollutants, especially excessive cigarette smoking, are cited as playing the dominant role.[2] This clearly indicates that the true origin of emphysema is still to be determined, but all evidence indicates that damage to alveolar and bronchiolar structures is involved.

We have observed many patients with industrial fibroses of the lung in whom the onset of the clinical picture of emphysema with bronchiolitis is often manifested by the symptoms and signs of bronchitis soon to be followed by bronchospasm, pulmonary overdistention, shortness of breath, sputum retention, and wheezing. The same sequence of events occurs in a great variety of bronchopulmonary diseases which have produced extensive destruction of lung parenchyma. We have often seen it in the clinical picture of so-called respiratory cripples after pulmonary diseases and likewise after surgical resections of the lung. We have noted it developing rather abruptly after pneumonias, pleurisies, postoperative pulmonary complications, and even after traumas, with or without known pulmonary involvement, such as embolic infarction. In such cases the symptoms and signs we have mentioned, followed by progressive pulmonary disability, often develop within a few months or even weeks.

In very few of these patients were we convinced that there was clinically significant bronchitis as the cause of the disabling disease. In most patients the bronchitis was slight, with a rather dry cough and a sputum that was scant and predominantly mucoid. In those patients with severer purulent bronchitis, treatment with antibiotics cleared up the infection, and yet the so-called bronchitis persisted, together with clinical emphysema, and often went on to progressive pulmonary disability.

Simple bronchitis as an isolated inflammation of the central tracheobronchial tree is perhaps one of the most common diseases met with in practice as well as a common postmortem finding in patients dying of wholly unrelated diseases. Yet, even when it becomes severe and protracted, it rarely leads to persistent airway obstruction and emphysema. The concept now prevails that chronic bronchitis eventually extends to the terminal branches of the bronchial tree, where obstruction results in mechanical overdistention of the air spaces. However, the assumption that the bronchiolitic process usually associated with pulmonary emphysema is merely an extension of the process from bronchitis proper has been disputed by pathologists[3] and is not borne out by clinical observations. These indicate, on the one hand, that bronchitis proper, even long-protracted and severe, rarely results in emphysema, while, on the other hand, emphysema often develops without antecedent bronchitis.

In order that bronchitis lead to emphysema, it is usually said that it must be long-protracted and severe. In our experience severe bronchitis and diffuse pulmonary emphysema are to a large extent incompatible. Marked diffuse emphysema is usually found with mild bronchitis and scant secretion, while severe bronchitis with copious secretion is usually accompanied by mild emphysema. The evidence speaks against causal relationship between bronchitis proper and true emphysema. Clinically, they are readily confused with each other because of some common clinical features due to the bronchiolitis that are invariably associated with emphysema, namely, cough, expectoration, and wheezing.

Nature of Emphysema

Pulmonary emphysema with bronchiolitis, manifesting the clinical picture of bronchospasm, pulmonary hyperinflation, and secretion of tenacious sputum, is neither a primary disease nor a specific clinical entity. It makes its appearance secondarily in a great variety of bronchopulmonary diseases, and its etiology includes all such agents as infections, allergies, and toxic air pollutants, the same ones that can produce bronchitis alone. The common denominator of all these is that they are capable of producing lung damage and leading to significant loss of normally functioning lung parenchyma.

Clinically, the signs and symptoms of emphysema are often marked when there is little evidence of anatomic emphysema by x-ray and autopsy. Vice versa, much anatomic emphysema, as evidenced by x-ray and autopsy, may exist without clinical symptoms and signs of its presence. Because of these facts pathologists[4] have emphasized the functional factor in bronchiolitis, one that is not accessible to pathological demonstrations. Clinicians have raised the question, "Is emphysema a clinical concept only?" There is a trend now to stress bronchial spasm as the primary factor in the origin of emphysema and to speak of "bronchospastic disease" with overdistention of the lungs, namely, emphysema, as a mere byproduct of variable extent, not directly related to the extent of functional disturbance.[5]

The functional and reversible nature of emphysema with bronchiolitis is borne out by the great discrepancy long known to exist between its clinical and anatomic criteria. Today even Laennec's concept of obstructive bronchiolitis leading to obstructive emphysema is generally interpreted as a functional mechanism. The current concept is that airway obstruction in emphysema is "air trapping" through disturbances in the normal function of the bronchioles.

It should be noted further that, contrary to what is generally assumed, there is no factual evidence for the existence of bronchospasm in asthma, bronchitis, or emphysema. Nor is there any morphologic evidence of actual obstruction of the bronchial tree. Obstruction to airflow is inferred on the basis of the clinical features, the signs and symptoms of disturbed ventilation of pulmonary hyperinflation, and the viscidity of secretions. Clinically, the distinction between obstructive bronchitis and emphysema is generally most difficult. Reliance is now put on functional testing, but the one test believed to be reliable for detecting the presence of emphysema, namely, determination of the over-all diffusing capacity, is barely out of the experimental stage.[6]

Finally, recent clinical and pathological observations indicate that the normal structural and functional integrity of the pulmonary parenchyma is conditioned upon the normal regulation of blood perfusion in the complex capillary bed of the bronchioles and alveoli by its double blood supply from pulmonary and bronchial arteries. Disturbances in this regulation may result in structural changes not unlike those seen in emphysema from other causes. Such disturbances in pulmonary circulation are known to result from a great variety of bronchopulmonary and pleural diseases. Thereby normally functioning lung tissue may be so damaged as to lead to the clinical picture of emphysema with bronchiolitis. The tenacious character of the secretions, we believe, indicates disturbances in fluid filtration normally flushing the alveolobronchiolar spaces. This fluid filtered out from alveolar capillaries has the mucolytic power required for self-cleansing of the terminal airways in the lungs.[7]

Comment

In view of the foregoing, we have come to look upon emphysema and bronchiolitis as clinical manifestations of disturbances in the functions and structures of the bronchioles and alveoli. The symptoms and signs indicative of bronchiolar spasm, pulmonary hyperinflation, and tenacious secretions, we believe, are primarily functional in nature, as is evidenced by their reversibility. Their relationship to progressive pulmonary insufficiency has been recently discussed by us elsewhere.[8] There we have emphasized the insidious character of the evolution of pulmonary insufficiency in later life owing to damage to lung parenchyma many years previously.

It is our concept that pulmonary insufficiency manifests itself first in disturbances of the normal function of the bronchioles and alveoli. The exact nature of this dysfunction, which we believe plays the key role in the pathogenesis of the clinical picture under discussion, remains to be determined when more will be known of the autonomic function of these terminal structures. There is now ample evidence of such activity playing the key role in the regulation of ventilation and circulation in the ultimate lung structures. The clinical picture of emphysema with bronchiolitis is logically interpreted as a manifestation of disturbed function of the bronchioles and alveoli owing to pulmonary insufficiency when pulmonary reserves have become exhausted. Progressive pulmonary insufficiency leads to chronic cor pulmonale, which has come to be recognized as a fairly common clinical picture. In an increasing proportion of cases this now ends in protracted cardiopulmonary failure.

Acute failure may be precipitated by intercurrent pulmonary infections, a bronchitis either with or without pneumonitis. In the preantibiotic era these were, in fact, frequent fatal complications of pulmonary insufficiency. In our experience bronchitis often develops secondarily in emphysema with bronchiolitis which has long preexisted. These have contributed to the confusion about the true origin and nature of the clinical picture.

A therapeutic aspect deserves special mention, because it bears upon the incompatibility between chronic bronchitis, characterized by copious expectoration, and diffuse emphysema, usually associated with scant tenacious secretions. Long ago Laennec described bronchiolitis of emphysema as "dry catarrh." This is borne out by clinical experience, indicating that the more diffuse and severe the emphysema, the more scant and tenacious are the bronchial secretions. Clinical experience has also shown that in severe emphysema, with almost complete arrest of expectoration, drugs which bring about return of expectoration and even temporary increase of secretory activity afford considerable relief from distressing symptoms and dyspnea. The beneficial effects of such drugs as potassium iodide and ammonium chloride appear to be related to the temporary increase in expectoration. The clinical features in these cases simulate asthma-like episodes by phases of increased bronchiolar spasm with arrest of expectoration, followed by its return marking the relief from symptoms. This periodic increase of secretions has led patients and observers alike to attribute the "attacks" to lack or retention of secretions.

Clinical experience indicates that in patients with severe diffuse emphysema episodes of bronchitic or pneumonitic infections resulting in purulent secretions, even of moderate amounts, are poorly tolerated. Such episodes are not infrequent secondary complications and, unless promptly controlled, often precipitate abrupt pulmonary failure even in cases far from the terminal stages. This has led to the oft-repeated statement that control of intercurrent bronchial infections is the most important factor in the prevention of pulmonary failure in emphysema. It should be noted, however, that, although bronchitic and pneumonitic infections are readily controlled by the many antibiotics now available, yet the mortality from cor pulmonale has increased rather than diminished, indicating that it is the emphysema and not the bronchial infection which is ultimately responsible for the pulmonary failure.

Summary

Simple chronic bronchitis is a common trivial disease of the central tracheobronchial tree. In the vast majority of cases it does not lead to the severe clinical picture of emphysema with bronchiolitis involving pulmonary function. When pulmonary function is involved, there is a clinical picture of emphysema and bronchiolitis which does not represent a specific disease. It is an ominous clinical picture which results from a great variety of bronchopulmonary diseases that involve the function of the finer structures of the lungs as a whole.

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SAFE TRANSPORTATION OF NEWBORN INFANTS FOR EMERGENCY SURGERY

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The transfer of a newborn infant from one hospital to another for the correction of a life-threatening congenital anomaly should be supervised by one person, and this person should be one who appreciates the need for dispatch. A competent attendant, preferably a nurse trained in the care of newborn infants, must accompany the patient. Air travel is not dangerous to the infant if traveling incubators and adequate nursing are available. It is desirable for the father to travel with the infant and nurse and to confer with the surgeon. The nurse must be provided with means for aspirating mucus in cases of esophageal atresia and for preventing intestinal distention in cases of omphalocele, diaphragmatic hernia, intestinal obstruction, and imperforate anus. The difficulties of transferring an infant from one hospital to another are outweighed by the advantages if the latter institution has a staff or provides equipment better adapted to the requirements of the case.

In recent years more attention has been given to early diagnosis and definitive surgery for the infant born with a congenital defect incompatible with life. The physician attending the newborn infant is suspecting or diagnosing these lesions soon after birth, and the infant is then being treated by a new group of specialists particularly interested in the management of these anomalies.

This new group of highly trained physicians, radiologists, anesthesiologists, and surgeons have concentrated their efforts largely in children's hospitals throughout the country where, in a team effort, the newborn infant undergoing corrective surgery has a better chance for survival. Newborn infants are being transferred to these centers from maternity hospitals, from smaller community hospitals, and from larger general hospitals which lack the facilities or the trained personnel necessary for the over-all care of the infant undergoing major reconstructive surgery.

Experience has shown that the newborn infant, with proper care, can tolerate transportation, whether it be a short distance or many hundreds of miles. The

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purpose of this paper is to discuss some of the factors which influence a safe trip for the infant. The first section discusses general considerations applicable to all infants regardless of their surgical defects, and the second section gives suggestions for the transportation of those with specific congenital anomalies.

General Considerations

A newborn infant with an anomaly incompatible with life should be operated on without delay, and hence his preparation for transfer and the actual transfer should be carried out with dispatch. The mechanics for this should be supervised by one person who appreciates the statistical fact that the salvage rate diminishes with each passing hour prior to the corrective surgery.

All infants should be given one of the vitamin K preparations intramuscularly, and the administration of antibiotics should be started as soon as the necessity for surgery is realized. Initial dosages of 30,000 units of aqueous penicillin and 30 mg. of streptomycin provide adequate protection. These should be given in the maternity hospital before transfer, so that effective serum levels will exist at the time of surgery.

Care must be taken to avoid unnecessary fatigue in these infants by repeated examinations or overzealous diagnostic procedures. The newborn infant's reserve, which is limited, must be protected for the surgical ordeal which lies ahead. It is, for example, unnecessary for most of these infants to have fluids, administered either intravenously or by hypodermoclysis, unless more than 36 or 48 hours have elapsed since birth. It has been found that the slightly "dry" infant is a better surgical risk than the overhydrated one. Oral feedings are, of course, contraindicated, not only because these are patients who will require a general anesthesia but also because of the serious risk of vomiting and aspiration during the preoperative period.

Maternity hospitals not equipped or staffed to do neonatal surgery should have portable incubators in which to transport infants. Such incubators are equipped with a small oxygen tank, so that a high concentration can be maintained, and, if necessary, oxygen can be given by mask. These incubators can be heated by a unit which takes current from the vehicle's storage battery, or, if the trip is a short one, the necessary heat can be supplied by well-covered hot water bottles placed in the incubator. It is just as important that the infant's temperature should not exceed normal as it is to prevent its falling below 97 F (36.2 C). Holding the incubator temperature at 85 to 88 F (29 to 31 C) will generally maintain an infant's temperature in a safe range.

We have had infants sent to our institution merely wrapped in blankets and held in a nurse's arms, with a small infant oxygen face-cone available. For short trips this is satisfactory, but a controlled atmosphere in a portable incubator is preferable and certainly essential for long journeys. Whether the infant comes by car or ambulance generally makes little difference, especially if a portable incubator is used. However, it is essential to have a competent attendant with the infant, preferably a nurse trained in the care of newborn infants. She must be able to aspirate the nose, pharynx, and stomach en route. For this purpose she should be supplied with a 8 F. red rubber catheter and a 20-cc. syringe. This small catheter readily enters the infant's nose, pharynx, or stomach without difficulty, and manual aspiration with the attached syringe works well. In spite of adequate aspiration in the maternity hospital, most of these infants require repeated clearing of secretions or intestinal contents during the trip.

Although transfer by private car or ambulance is most common, we now know that air travel is not dangerous if traveling incubators and adequate nursing are available. Many newborn infants have now been flown hundreds of miles to centers equipped for neonatal surgery and care. We have found most airlines cooperative in providing transportation, as are the airports in allowing ready transfer of the infant and attendant from plane to waiting vehicle.

It is desirable for the father to travel with the infant and nurse to the children's hospital, since the surgeon should meet the father, discuss the seriousness of the contemplated surgery, and answer his many questions. There has been no long-range psychological preparation for the arrival of an imperfect offspring and the risks of a serious operation. The infant's transfer should not be delayed, however, if the father is not available.

Management of Specific Congenital Defects

Omphalocele.—Omphalocele is one of the most urgent defects requiring surgical correction. The thin, avascular omphalocele sac is in danger of rupturing, with evisceration and contamination of the abdominal contents and the peritoneal cavity. Early administration of antibiotics is important, and efforts should be made to keep the omphalocele sac clean and moist. Gauze sponges soaked in an aqueous antiseptic solution (aqueous benzalkonium [Zephiran] chloride) should be placed around the sac and should be held in place by a diaper or wide bellyband pinned with a safety pin around the infant's middle. This dressing will keep the omphalocele membrane clean and moist and will support the sac and lessen the chance of evisceration.

As the infant swallows air, the intestines become progressively more distended, which leads to greater difficulty in reducing the herniated organs and closing the large ventral defect at the time of surgery. Therefore, the infant born with an omphalocele, large or small, should have a 8 F. catheter (with several extra holes cut into it) passed into the stomach and kept on constant suction until the surgery has been done. In this way most of the swallowed air will be removed, and hence the intestinal loops will occupy less space.

Method of Evaluation

A premature infant was defined as an infant weighing less than 2,501 Gm. (5.5 lb.) at birth. It was estimated that a single year's experience in hospitals throughout Maryland would be sufficient. The study was planned to obtain two sets of data: (1) information concerning the hospitals which would permit rating them as to their conformity to the standards, and (2) observations about the premature infants cared for by the hospitals which would not only answer the question of survival but would also allow proper consideration to be given to differences in the kinds of population served by the hospitals.

Rating the Hospitals.—Continuous observation of the practices of each hospital throughout the study year—and this done without influencing hospital behavior—would provide the ideal data for judging the extent to which the hospitals conformed to standards. As the closest approximation to this that seemed practicable, two surveys of the hospitals were made, one at the beginning of the study year and one at the close. Thus changes during the year, other than temporary changes between the surveys, would be recognized.

The surveys were conducted by a team of two of us, one a pediatrician (H. K.) and the other a certified nurse-midwife (S. E. F.), both experienced in making observations on premature nursery care. A questionnaire was developed to record the observations and to facilitate scoring. It comprised approximately 90 items which were chosen from among the standards for care of premature babies listed in the manual described above. The selection was made by the study staff after consultation with a number of authorities in the fields of infant care and obstetrics. The aim in making the selection was to provide in questionnaire form a fairly complete summary of the standards. As far as possible each question was phrased to permit a yes or no answer, although some questions required a graded response or a simple listing or description of the pertinent facts.

The final step in defining the criteria for measuring hospital conformity to standards was determining a system of scoring the questionnaires so that the hospitals could be ranked. The method used was to divide the questions into six groups of related items, assigning to each group a weight believed to indicate the group's relative importance. The sum of the weights was made equal to 100. The following weighting was used: 1. Labor, delivery, transit to nursery, 19. 2. Nursery space, facilities, practices, 19. 3. Medical staff and policies, facilities for transfusion and laboratory examinations, 19. 4. Nursing staff and policies, 19. 5. Records, 14. 6. Postdischarge policies, 10.

Items included in each of the above groups were assigned weights so that the total of the weights within a group equaled the assigned group weight. The aim here also was to have the individual item scores reflect the relative importance of the items within the specific groups.

The decisions on the scoring were made prior to the surveys, except for a few judged inadequate on the basis of early experience. In these instances the items' maximum scores were not changed but partial scores were defined. Detailed definitions and instructions were prepared as an aid to uniform interpretation of the questions and their scoring.

A preliminary visit was made to each hospital that provided care to premature infants to explain the study and to enlist cooperation. Subsequent survey visits were made by appointment, at which time key hospital personnel were interviewed and certain facilities and practices were directly observed.

Information Concerning the Premature Infant.—All premature infants born in Maryland in 1952 and cared for in the hospitals of Maryland were included in the study. The hospitals agreed to furnish on forms provided to them certain details concerning each premature baby under care. The completeness of reporting was checked by reference to registered births for the same year, and over 98% of the required reports were received.

The neonatal survival status (28 days) was the primary fact about each child on which this evaluation study depended. There were four sources for this information: 1. The reports from the hospitals provided discharge date and status. Thus for all discharges of infants aged 28 days or over and for hospital deaths of infants under 28 days of age the 28-day status was known. 2. Death certificates for infant deaths were matched with birth certificates in Maryland, and so age at death for all of the premature infants dying in Maryland under one year of age was theoretically known from this source. For babies known to have been moved from Maryland prior to their reaching 28 days of age the vital records office of the state to which the baby went was asked to search its infant death files. Most states have filing systems that permit them to answer such a request. 3. Home visits were made by public health service nurses when the premature infants were over one month of age. These visits, part of a follow-up program not discussed in this paper, were limited to Maryland residents not known to have died in the hospital and for these infants provided a positive check on the survival of those not reported as dead to the vital records offices. 4. Letters to physicians or mothers or both for out-of-state babies were also used as a source of information on survival.

If a positive statement concerning either survival at 28 days or death prior to that age was not obtained, the 28-day survival status was considered unknown. There were 1.7% of the babies in this category of unknown neonatal survival.

The forms which were provided the hospitals were designed to furnish information concerning the premature infants cared for by each hospital so that as far as possible factors which might influence neonatal survival but which were independent of hospital practices might be identified and controlled. In addition, some data were obtained on the hospital report form as base-line information for the later follow-up study mentioned previously. The following subjects were included: identifying information, economic status of family, age and parity of mother, race, sex, birthweight, length of gestation, prenatal care, transportation history for in-transfers, length of labor, analgesia and anesthesia, type of delivery, complications of pregnancy, labor and delivery, immediate postnatal condition of infant, and a few items concerning the care and health status of the baby during the hospital stay.

Results

The arithmetic average of the two survey scores was used to rate the hospitals. On the whole the second score was higher than the first, the average difference being about five points. However, this shift was fairly uniform so that a hospital's rank was little different whether the first or second survey score was used. (Spearman's rank correlation coefficient equals 0.94.) The scores (here and subsequently this refers to the average of the two scores) ranged from 8.5 to 82.4 and were distributed as shown in table 1, second and fourth columns. The corresponding distribution of babies according to the score of the hospitals in which they received care are given in the third and fifth columns of table 1. Comparison of the hospitals and baby distributions reveals the tendency of the larger hospitals to score higher than the smaller ones.

Table 1.—*Distribution of Hospitals and Babies According to Hospital Score, Maryland, 1952*

Score	Hospitals with Given Score, No.	Babies Cared for in Hospitals with Given Score, No.	Hospitals with Given Score, %	Babies Cared for in Hospitals with Given Score, %
5-14	2	75	4.3	1.7
15-24	9	275	19.6	6.1
25-34	5	268	10.9	5.9
35-44	8	822	17.4	18.2
45-54	10	896	21.7	19.8
55-64	7	753	15.2	16.6
65-74	3	812	6.5	17.9
75-84	2	624	4.3	13.8
Total	46	4,525*	99.9	100.0

* 4,458 different babies, with 67 babies transferred from one hospital to another being counted twice. One hundred twenty-four of the babies were home deliveries, 4,334 were born in a hospital.

For the purposes of correlating neonatal survival with degree of conformity to standards, the hospitals were grouped in three divisions ranked according to hospital score so that each division contained approximately one-third of the premature infant population. Table 2 shows this grouping. The higher scoring of the large hospitals is again evident. In addition, the concentration of the nonwhite babies in these hospitals is noteworthy.

Table 3 summarizes the comparison of the three hospital divisions. The top ranking hospitals had a clear and statistically significant advantage over the two lower ranking hospital divisions for infants in the intermediate weight groups, 1,001 to 2,000 Gm. (2.2-4.4 lb.). In the 1,001-1,500 Gm. (2.2-3.3 lb.) birthweight group the neonatal survival rate for the third of the babies cared for in the top ranking hospitals is about 16% above that for the remaining hospitals, with the standard error of this difference being 5.4%. The corresponding difference in the 1,501-2,000 Gm. (3.3-4.4 lb.) group is about 8%, with a standard error of 2.6%. There was no significant difference among the hospital divisions in the extreme birthweight groups, under 1,001 Gm. (2.2 lb.) and 2,001 to 2,500 Gm. (4.4-5.5 lb.). Nor was there evidence of any difference in survival rate between the middle and lowest ranking hospital divisions in any weight group.

Table 2.—*Hospital Divisions, Showing Scores, Number of Hospitals, and Number of Premature Infants by Race, Maryland, 1952*

Hospital Division	Hospital Score	Hospitals, No.	Premature Infants, No. White	Premature Infants, No. Nonwhite	Premature Infants, No. Total
High 3rd	65 and over	5	539	897	1,436
Mid 3rd	50-64	14	1,350	111	1,461
Low 3rd	Under 50	27	1,302	326	1,628
Total	8.5-82.4	46	3,191	1,334	4,525*

*See note to table 1.

As suggested earlier, one must consider various factors relating to the type of population cared for by the different hospital divisions before assuming that a difference in neonatal survival is causally related to the degree of conformity to standards. The material has, therefore, been examined specifically for each of the following characteristics: race, complications of pregnancy, labor and delivery, number of prenatal visits, and parity and education of the mother, the last as another index of socioeconomic level. In no case was there evidence that these factors have produced the difference demonstrated in table 3.

Two additional factors were considered: hospital transfers and fetal deaths. The number of transfers was small; only 73, or 1.7%, of the infants born in the hospital were transferred; however, since the transfer nearly always occurred from a lower ranking hospital to a higher and since there might well be some selection for transfer related to survival, this factor was examined. Table 3 presents the data with the transfers included in the hospital of birth.

When the same material was examined with the transfers assigned to the hospital to which they were transferred, the results were essentially unchanged.

It was presumed that the basic definition of a fetal death was the same in each hospital and was in accord with the recommendation of the National Office of Vital Statistics. However, it was recognized that individual hospitals might differ in practice as to their classification of borderline cases. It was pertinent, therefore, to examine the comparison of the hospital divisions according to perinatal survival, defining *perinatal survival* as the ratio of 28-day survivors to the total of live births and fetal deaths of 20 or more weeks gestation. As with the other factors considered, this did not alter the findings.

One might ask if use of a shorter interval than the 28-day period would have altered the relationship between hospital rank and survival rate. Survival rates for the intervals from birth to one day, two days, and one week were examined in this connection, and the findings were unchanged. Furthermore, it was found that for the subintervals from birth to 1 day, 1 day to 2, 2 to 7 days, and 7 to 28 days, the survival rate for the top third of the hospitals uniformly exceeded that of the low two-thirds; although, as the survival rate rises in the later intervals and the corresponding number of deaths in this experience becomes small, the differences are not statistically significant.

TABLE 3.—*Neonatal Survival Rate According to Hospital Division and Birthweight, Hospital-born Premature Infants,* Maryland, 1952*

	Birthweight, Gm. (Lb.)												Total	
	Under 1,001 (2.2)			1,001-1,500 (2.2-3.3)			1,501-2,000 (3.3-4.4)			2,001-2,500 (4.4-5.5)				
Hospital Division	Births	Surviv-als, No.	Surviv-als, %	Births	Surviv-als, No.	Surviv-als, %	Births	Surviv-als, No.	Surviv-als, %	Births	Surviv-als, No.	Surviv-als, %	Births	Adjust Surviv als, %
High 3rd	104	4	3.8	133	77	57.9	249	220	88.4	784	760	96.9	1,270	85.6
Mid 3rd	91	5	5.5	104	41	39.4	264	210	79.5	958	914	95.4	1,417	81.5
Low 3rd	93	6	6.5	126	55	43.7	303	243	80.2	1,049	1,003	95.6	1,571	82.2
Total	288	15	5.2	363	173	47.7	816	673	82.5	2,791	2,677	95.9	4,258	83.1

* Transfers are tabulated according to hospital of birth; 76 unknown as to 28-day survival are excluded.

† Weight distribution of the total births is used as the standard population.

The data presented support the standards insofar as survival is a criterion. Subsequent follow-up of a sample of these babies and a longitudinal comparison of them with a matched group of full-term babies is now in progress. Data on the neurological status and intellectual potential of these babies at 40 weeks of age have been reported and show that the incidence of abnormality increases as the birthweight decreases.[2] The number of premature infants who survived to 40 weeks of age and were included in the longitudinal study is too small to demonstrate any difference between hospital divisions as to the incidence of neurological or intellectual defect. It is not to be assumed that a study with larger numbers would demonstrate such a difference, for the lack of a significant difference might also be due to better prenatal and perinatal care in the high-ranking hospitals. However, one must add that the initial or 40-week results of the longitudinal comparison of premature and full-term babies have the practical implication that increased emphasis and support should be given to methods of preventing or delaying premature birth. This is a problem which is largely in the hands of obstetricians, general practitioners, and the community agencies and facilities which serve women during pregnancy and delivery.

Summary

An evaluation of currently accepted standards for hospital care of premature infants was made by ranking all hospitals in Maryland on the basis of conformity to such standards and then correlating their rank with the neonatal survival rate of premature infants under their care in 1952. The study was designed to test the value of the standards as a whole but was not intended to assess any one item.

The data showed that hospitals conforming closely to accepted standards for the care of premature infants did exhibit a higher neonatal survival rate than did other hospitals. The findings could not be explained on the basis of the type of patient cared for by the hospitals. It is our opinion that these data are evidence of a cause and effect relationship between conformity with accepted standards and neonatal survival and so support the view that the standards in toto are valid.

This study was supported in part by the Maryland State Department of Health from funds made available by the Children's Bureau, United States Department of Health, Education, and Welfare, and in part by funds from the Thomas Wilson Sanitarium.

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CLINICAL EXPERIENCE WITH HEMOLYTIC DISEASE OF NEWBORN INFANTS

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The results achieved in caring for 251 infants with hemolytic disease secondary to Rh blood group incompatibility varied significantly according to the infants' age when first available for treatment. Treatment was aimed to maintain the total serum bilirubin level below 20 mg. per 100 ml. during the first five days of life. A cure was achieved in 97% of those infants first seen prior to their age of 12 hours and the five failures encountered in this group of infants were deaths occurring among babies born critically ill. The percentage of failures among the infants who were referred after age 12 hours was 12% and the type of failure encountered was most frequently an infant who survived with cerebral palsy.

Fifty-six of the infants available for treatment early were babies born to women who had had a previous infant with hemolytic disease secondary to an Rh blood group incompatibility. Fifty-three of these infants did well and three died. Therefore one is not justified in the great majority of instances in recommending that a sensitized woman not risk a future pregnancy.

Because of a significantly higher percentage of failures encountered in premature infants and because of the difficulty in being certain that a previously sensitized woman is carrying an infant with hemolytic disease, warning is given against the indiscriminate use of early termination of pregnancy in the management of this disease. This approach should be used only in carefully selected cases.

During the years 1953, 1954, and 1955, 251 newborn infants with hemolytic disease secondary to an Rh blood group incompatibility were referred to the Children's Hospital of Philadelphia prior to their age of 72 hours or were seen shortly after birth at the Hospital of the University of Pennsylvania and the Pennsylvania Hospital. Exchange transfusions were performed, when necessary, to control the infants' plasma heme pigment[1] and total serum bilirubin levels[2] during the first few days of life. Two hundred eighty exchange transfusions were performed in caring for the total of 251 infants. The majority of these exchange transfusions were 500-ml. exchanges. An occasional 1,000-ml. exchange transfusion was performed. In some premature babies the exchange transfusion was considered adequate before 500 ml. was injected but never before a volume equivalent to two times the infant's circulating blood volume had been injected. With the exception of the 1,000-ml. exchange transfusions, all the procedures were completed within one hour. In four instances, death occurred during the exchange transfusion or within two hours after the procedure. This gave a mortality rate of exchange transfusion of 1.4%. The four deaths occurred in infants who were severely anemic and edematous and who showed signs of respiratory distress prior to the beginning of the exchange transfusion. All the exchange transfusions were performed via the umbilical vein with six exceptions. In these six cases, a satisfactory withdrawal could not be established via the umbilical route and it was necessary to cut down on the femoral vein. In no instance was an artery cannulated. The results achieved are presented in this report.

Table 1 compares the results achieved in 167 infants who were first seen before their age of 12 hours with the results achieved in 59 infants who were referred after their age of 12 hours. All the infants in this group weighed 2,500 Gm. (5.5 lb.) or more at birth. Ninety-seven per cent of the patients seen early did well as compared to 88% of the patients who were referred late. There was a significant difference in the type of failure encountered in the two groups. All the failures in the babies seen early were deaths occurring in critically ill infants. The failures encountered in the patients referred late were, for the most part, in infants who survived with cerebral palsy.

Table 1 also compares the results achieved in "full-term" with those achieved in "premature" infants. All patients presented in these groups were seen prior to their age of 12 hours. Those infants who weighed 2,500 Gm. or more were classified as full-term, and those who weighed less than 2,500 Gm. were classified as premature. A successful result was achieved in 97% (162 of 167) of the full-term as compared to 76% (19 of 25) of the premature infants. All the failures in these groups were deaths in critically ill babies, and kernicterus with resultant cerebral palsy did not occur.

Table 2 gives the frequency of exchange transfusion as performed in the treatment of the 192 infants, both full-term and premature, who were

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first seen prior to their age of 12 hours. One-third (64) of the patients did well without benefit of an exchange transfusion, one-third (66) required a single exchange transfusion, and one-third (62) required multiple exchange transfusions. A varying pattern of need for exchange transfusion was encountered in the premature as well as in the full-term infant.

TABLE 1.—*Frequency of Failure According to Weight at Birth and Age When First Seen in Infants with Hemolytic Disease Due to Rh Incompatibility (1953, 1954, 1955)*

Age When First Seen, Hr.	Wt. at Birth, Gm.	Infants, No.	Failures		Types of Failure	
			No.	%	Death	Cerebral Palsy
Under 12	>2,500	167	5	3	5	0
Over 12	>2,500	59	7	12	2	5
Under 12	<2,500	25	6	24	6	0

Table 3 presents the results achieved in subsequent infants with hemolytic disease of the newborn who were born to 56 women who had previously given birth to an infant with hemolytic disease. All the subsequent infants were seen before the age of 12 hours. The status of the previous infant is given along with the result achieved in the subsequent infant. Fifty-three of the 56 subsequent infants did well, and the three failures were deaths which occurred in infants born critically ill.

Comment

The results and findings presented in table 1 underscore those factors which contribute to a successful outcome and those which invite failure. Thus the necessity for early diagnosis and treatment is indicated by this table. Early diagnosis can be assured by the practice of typing the blood of all pregnant women and by testing the serum of those who are Rh negative for the presence of Rh antibodies. This will provide forewarning as to the birth of most infants with hemolytic disease. The performance of a direct Coombs test on the cord blood of the infant at the time of birth will establish the diagnosis. These disciplines represent inexpensive insurance against tardy diagnosis with its risk of cerebral palsy. Once the diagnosis is established, as many exchange transfusions should be performed in a given infant as are necessary to maintain the total serum bilirubin level below 20 mg. per 100 ml. during the first five days of life, and longer in premature infants. Consequently, an institution assuming responsibility for the care of these infants should be prepared to perform serologic studies, determine total serum bilirubin levels and perform exchange transfusions on an "around-the-clock" basis.

TABLE 2.—*Frequency of Exchange Transfusion in Infants with Hemolytic Disease Due to Rh Incompatibility (1953, 1954, 1955)**

Wt. at Birth, Gm.	Infants, No.	Exchange Transfusion		
		None	One	Multiple
>2,500	167	60†	53	54
<2,500	25	4	13	8
Total	192	64	66	62

* All infants first seen before age of 12 hr.
† No failures when exchange transfusions not performed.

The influence of the state of maturity of the infant on the outcome is indicated in table 1. A comparison of the results in infants weighing less than 2,500 Gm. with those in infants weighing 2,500 Gm. or more shows a successful result in only 76% of the premature as compared to 97% of the full-term infants. The poorer results in the premature infants reflect two things. One is the morbidity and mortality of prematurity per se, and the second is that any series of cases of hemolytic disease will contain a greater number of premature infants born critically ill than full-term infants born critically ill. This is because many severely sensitized women will go into labor spontaneously prior to their expected date of confinement and will give birth to a premature baby who is severely affected with hemolytic disease. It does not, in this series, reflect a higher incidence of kernicterus, as these patients were all available for treatment prior to their age of 12 hours. It should be emphasized that in an attempt to be as accurate as possible gestational age was not used as a criterion of prematurity in this series of infants. Had gestational age, as well as birth weight, been used, a few hydropic infants who were classified as full-term because they weighed more than 2,500 Gm. would have been classified as premature infants. This would have resulted in a slight improvement in the percentage of successful results achieved in the "full-term" and a corresponding lowering of this percentage in "premature" infants. Thus the discrepancy between the two groups would have been even more marked.

TABLE 3.—*Results in Erythroblastotic Infants Born to Fifty-six Women Who Had Previously Given Birth to Infant with Hemolytic Disease Due to Rh Incompatibility (1953, 1954, 1955)**

Previous Infant	Women No.	Subsequent Infant†	
		Alive and Well	Died
Stillborn	6	6	0
Live born, died	13	11	2
Live born, cerebral palsy	2	2	0
Alive and well	35	34	1
Total	56	53	3

* All seen before age of 12 hr.
† None developed cerebral palsy.

These comparative results between premature and full-term infants have particular meaning today because the early termination of a pregnancy as a method of managing selected cases of severe maternal sensitization is now being reexplored with increasing frequency. It is perfectly logical to reason that in certain instances it would be better to terminate a pregnancy early and thus obtain a live baby than to wait overly long and have that infant die in utero. However, it is extremely difficult to determine with any degree of accuracy which fant will do better if delivered early. Moreover, experience has shown that the indiscriminate practice of the early termination of pregnancy, while resulting in the birth of a greater number of liveborn infants, leads to a significantly lower over-all success rate because of a much higher neonatal mortality.[3] Therefore, while there is merit in the practice of the early termination of pregnancy in carefully selected cases, one should be cognizant of the risks involved and use caution.

The variability of the severity of this disease is reflected in the need for exchange transfusion as presented in table 2. All the infants presented in this table were available for treatment early, and exchange transfusions were performed to control their plasma pigments, including their total serum bilirubin levels, during the first five days of life, and longer in premature babies. No failures were encountered in those infants who did not receive transfusions. It will be noted that approximately one-third of the full-term infants did not require an exchange transfusion and one-third required multiple exchange transfusions. It is also interesting to note that there were a few premature babies who had mild hemolytic disease and did well without benefit of this procedure.

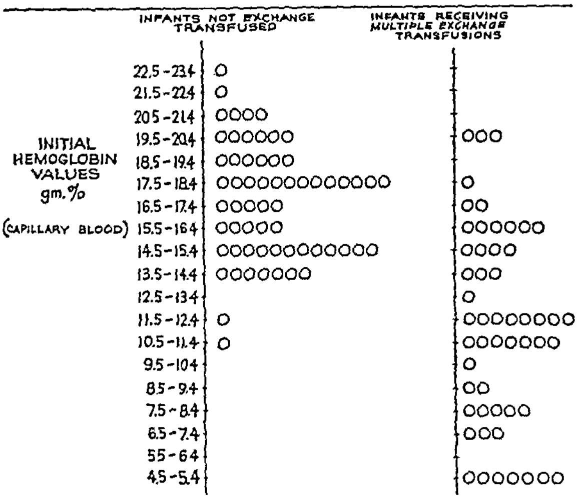

Fig. 1.—Initial hemoglobin values in infants with hemolytic disease due to Rh incompatibility (1953, 1954, 1955). All infants were seen prior to their age of 12 hours. Infants who did not receive exchange transfusions are living and well.

Table 3 is presented in an attempt to counter a common misconception. Many women have been and are being advised against becoming pregnant again once they have given birth to an infant with hemolytic disease. Our results do not support such pessimism. Fifty-six of the 192 full-term and premature infants available for treatment prior to their age of 12 hours were born to women who had previously had an infant with hemolytic disease. A successful result was achieved in 53 (95%) of these 56 infants. The three failures were deaths, and kernicterus was not encountered. It must be pointed out that this series of 56 subsequent infants with hemolytic disease was comprised entirely of liveborn babies and therefore does not indicate the incidence of stillbirths in previously sensitized Rh-negative women. Nevertheless, the results presented make me feel that one is not justified in advising against a future pregnancy unless a woman has previously given birth to a stillborn infant. Even this situation, as indicated by table 3, is not entirely hopeless.

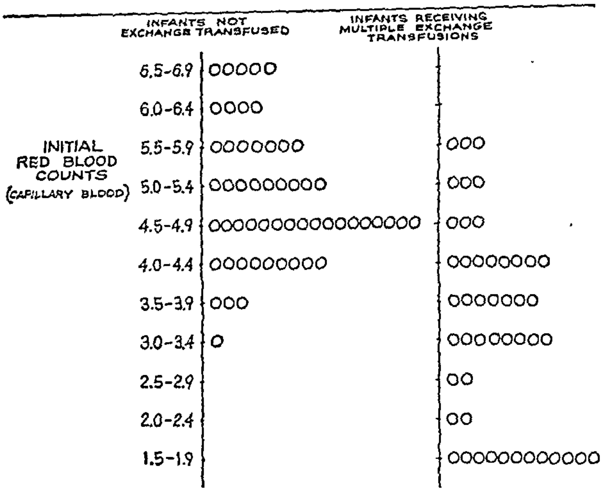

Fig. 2.—Initial red blood cell counts in infants with hemolytic disease due to Rh incompatibility (1953, 1954, 1955). All infants were seen prior to their age of 12 hours. Infants who did not receive exchange transfusions are living and well.

In view of the fact that delayed treatment plays such an important role in contributing to a high incidence of cerebral palsy, it seemed advisable to analyse those factors most frequently responsible for delay. Aside from the failure to make an early diagnosis, the placing of too much reliance on the absence of abnormal physical findings and too much reliance on the finding of normal blood cell counts at birth were frequently responsible for delay. Not

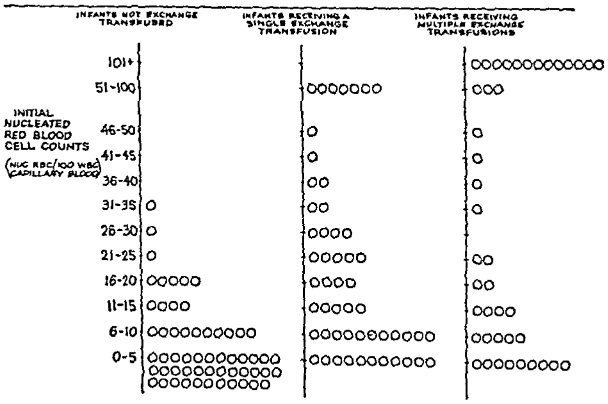

Fig. 3.—Initial nucleated red blood cell counts in infants with hemolytic disease due to Rh incompatibility (1953, 1954, 1955). All infants were seen prior to their age of 12 hours. Infants who did not receive exchange transfusions are living and well.

infrequently the fact that the maternal Rh antibody titer was low was responsible for the withholding of an exchange transfusion. None of these findings are guarantees against an infant developing high total serum bilirubin levels during the first five days of life with resultant kernicterus.

Figures 1, 2, and 3 give the initial hemoglobin levels and erythrocyte and nucleated red blood cell counts in infants who did well without benefit of exchange transfusion and in infants who required at least two such procedures. All the infants were first seen prior to their age of 12 hours. These charts show that an appreciable number of infants who required two or more exchange transfusions had normal or near normal initial hemoglobin values and erythrocyte and nucleated red blood cell counts and conversely that a fair percentage of those infants who did well without benefit of this procedure had low hemoglobin values and erythrocyte counts.

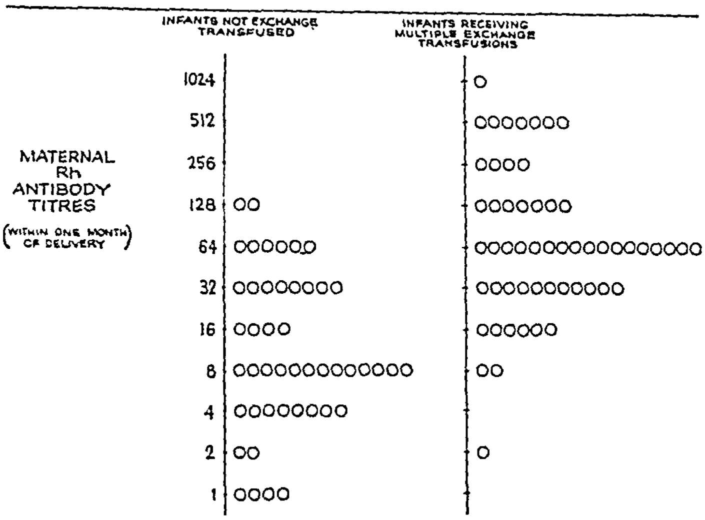

Fig. 4.—Maternal Rh antibody titers of women with infants born with hemolytic disease due to Rh incompatibility (1953, 1954, 1955). All infants were seen prior to their age of 12 hours. Infants who did not receive exchange transfusions are living and well.

Figure 4 gives the height of the maternal antibody titers obtained within one month prior to delivery or at the time of delivery on women whose infants did well without exchange transfusion and on women whose infants required two or more such procedures. All the infants were available for treatment prior to their age of 12 hours. It is seen that a significant number of the infants who did not require an exchange transfusion were born to women who had high titers and also that several infants who required multiple exchange transfusions were born to women whose Rh antibody titer was 1:16 or less. The fact that the height of the maternal Rh antibody titer frequently does not correlate well with the severity of the disease in the infant does not detract from the value of this test in forewarning of the birth of a baby with hemolytic disease and therefore does not significantly diminish its importance. More help can be obtained from the maternal Rh antibody titer in predicting severity of disease if several titer determinations are performed during the pregnancy and changes in the character of the titer observed.

Summary

The results achieved in the management of 251 consecutive infants with hemolytic disease secondary to an Rh blood group incompatibility indicate (1) the necessity for typing of blood of all pregnant women and for testing for the presence of Rh antibodies in the serum of those who are Rh negative, (2) existing misconceptions concerning the prognosis for future infants of women who have previously given birth to infants with hemolytic disease must be countered, and (3) early diagnosis and treatment are necessary in the management of this disease.

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Peptic Ulcer After Cardiac Surgery.—Acute peptic ulceration following cardiac surgery has been demonstrated in four patients and clinically suspected in three others. This is a most serious complication, four of the cases having died as a direct result. Another survived only after emergency gastric resection. Prompt diagnosis is essential for a favorable outcome and may be attained only by a constant alertness to the possibility of an acute ulcer in any postoperative cardiac patient who is not doing well. Early surgery, rather than a more conservative program of therapy, may be lifesaving in these cases and should not be withheld merely because the patient has recently undergone cardiac surgery.—D. Berkowitz, M.D., B. M. Wagner, M.D., and J. F. Uricchio, M.D., Acute Peptic Ulceration Following Cardiac Surgery, *Annals of Internal Medicine,* June, 1957.

CONVULSANT ACTION OF PHENOTHIAZINE DERIVATIVES

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Recent experience indicates that at least some of the ataraxic drugs, in relatively large doses, have the capacity to initiate epileptiform activity or to increase susceptibility to seizures. Present observations indicate that phenothiazine derivatives have the capacity to induce seizures, particularly in those individuals with a predisposition to such attacks, but the mechanism which enhances such susceptibility is not readily apparent. Caution must be exercised when administering the phenothiazine derivatives to patents with a history of seizures or to patients known to have had organic brain damage or latent epilepsy who theoretically may have some predisposition to seizures.

here are a number of diverse chemical agents ich have the capacity to initiate epileptiform activ- or to increase susceptibility to seizures. With a few eptions (atropine, cortisone, procaine, and various ihistamines), such agents are seldom used thera- itically, and seizures are encountered only when y are accidentally ingested or taken for suicidal poses. Recent experience indicates that at least ıe of the ataraxic drugs must be added to the list of eptions. The occurrence of 14 seizures in 11 of 21 chiatric patients receiving intensive chlorpromazine rapy has been reported by Schlichther and others.[1] uceri and Strauss[2] reported electroencephalo- phic findings in a nonepileptic who had attempted ide with chlorpromazine, and they noted diffuse ke and wave patterns indicative of epilepsy. Other estigators[3] have noted convulsive disorders asso- ed with the administration of various ataraxic nts, particularly in subjects with a predisposition to ures. In the present report, clinical and experi- ntal observations of the effects of several pheno- ızine derivatives on the excitability threshold of the tral nervous system are presented.

Method

linical observations were made on the incidence of ıvulsions following the parenteral administration of orpromazine and promazine to more than 3,000 itely disturbed patients admitted to the psychiatric vice of the District of Columbia General Hospital. of these subjects exhibited increased psychomotor ivity due to various psychoses or to the withdrawal alcohol, barbiturates, or opiates. The dose of chlor- ımazine or promazine given intravenously or intra- scularly ranged from 50 to 400 mg. and was given varying intervals for periods of one to seven days.

he effect of promazine on the cerebral electrical ivity of 21 subjects with a history of convulsive order was also determined with a 6-channel Grass ctroencephalograph. After initial tracings were en, all anticonvulsant medication was discontinued several days. Tracings were then obtained prior to, d from 45 minutes to 2 hours after, the administra- n of 50 to 250 mg. of promazine.

n four other patients with a known history of sei- res, the effects of promazine on cerebral electrical ivity were determined after an activating oral dose pentylenetetrazol. After control tracings were taken, ey were given 700 mg. of pentylenetetrazol (Metrazol) orally, and immediately thereafter, for approximately one-half hour, cerebral electrical activity was again recorded. The subjects were then given promazine (300 mg. orally), and tracings were again obtained. In most instances, continuous tracings were recorded from the time the patients received pentylenetetrazol to one-half to two hours after promazine administration. The case reports of several subjects in whom seizures are believed to have been initiated by the administration of promazine are presented.

In addition to these patients, 45 hyperactive patients with mental deficiency were given Wy-1107 [10-(3-diethylaminopropyl) phenothiazine], a phenothiazine derivative, for control of their behavioral disturbances. The drug was administered orally in doses ranging from 150 to 600 mg. daily, given in three divided doses. Five of the 45 subjects had a history of convulsive disorder of either traumatic or congenital origin.

Results

The incidence of grand mal convulsions in the group of subjects experiencing alcohol withdrawal symptoms and given either chlorpromazine or promazine parenterally for relatively short periods of time was approximately of the same order for each drug (9 and 7% respectively). This incidence was less than that of "rum fits" reported by Victor and Adams[4] as occurring spontaneously in a similar group of subjects. Unfortunately, electroencephalograms could not be

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rom the District of Columbia General Hospital and the ildren's Center.

obtained on any of these subjects after recovery to rule out cerebral dysrhythmia due to causes other than drug withdrawal.

In only one subject of the above group (a chronic alcoholic with severe delirium tremens) could the occurrence of the seizure be probably directly attributed to the administration of the phenothiazine derivative. The patient was given intravenously 700 mg. of promazine within a period of 30 minutes. Five minutes after the last 250 mg. was injected, the patient had a typical grand mal seizure, lasting for about 30 seconds. Subsequent examination failed to disclose a history of seizures or an abnormal electroencephalogram. Two of the 10 subjects who received chlorpromazine for the management of barbiturate withdrawal symptoms had grand mal seizures. Isbell[5] has reported the frequent occurrence of spontaneous seizures following the abrupt withdrawal of barbiturates.

Effect of Promazine on Cerebral Electrical Activity in Subjects with History of Seizures

Case No.	Clinical Diagnosis	Promazine, Oral Dose, Mg.	Control EEG	EEG Changes After Oral Dose of Promazine*
1	Grand mal epilepsy	100	Normal	Sleep spindles
2	Traumatic seizures	150	Normal	...
3	Alcoholic seizures	150	Spikey	...
4	Jacksonian seizures	150	5-7/sec. waves	Sleep spindles
5	Grand mal epilepsy	250	Normal	...
6	Grand mal epilepsy	150	Spikes, spike wave, slow	...
7	Grand mal epilepsy	50	Spike wave, slow	Sleep spindles, K complexes
8	Grand mal epilepsy	50	Spiking	...
9	Traumatic seizures	100	Normal	...
10	Grand mal epilepsy	100	Normal	...
11	Grand mal epilepsy	200	Borderline Normal	...
12	Psychomotor seizures	200	Normal	Sleep spindles
13	Jacksonian seizures	100	Normal	Sleep spindles
14	Psychomotor seizures	200	Normal	...
15	Syncopal attacks	300	Spiking, 5-7/sec., slow	...
16	Grand mal epilepsy	250	Normal	Sleep spindles
17	Jacksonian seizures	150	Slow waves	Sleep spindles
18	Grand mal epilepsy	150	Normal	...
19	Grand mal epilepsy	75	Slow waves	...
20	Grand mal, petit mal	400	Spike wave, slow waves	...
21	Grand mal, petit mal	300	Small spikes, bitemporal	...

* No changes in all cases.

The table presents the interpretation of electroencephalograms taken before and after the administration of promazine to 21 patients with a known history of seizures. All of the subjects became more relaxed after the administration of promazine, and, in seven instances, spindles characteristic of sleep were observed. Convulsions did not occur in any of these subjects, and activation, possibly attributable to promazine administration, was noted in only one patient.

The administration of both pentylenetetrazol and promazine to the four subjects with a history of seizures did not result in either seizures or alteration of the electroencephalogram except for some increase in amplitude of basic pattern. Figure 1 demonstrates the tracings of one of these subjects before and after drug administration.

Report of Cases

The case histories of three subjects who experienced seizures during promazine administration are presented below.

Case 1.—The electroencephalogram of a mentally retarded patient taken two years prior to the present observations disclosed 3 to 4 per second waves but no definite seizure pattern. There was no history of seizures, but because of several "syncopal attacks" he was admitted to the hospital for study. The electroencephalogram taken prior to the oral administration of 200 mg. of promazine showed frequent irregular spike wave formations and K complexes. Within 30 minutes after promazine ingestion, there was a fairly rapid build-up with the spike wave patterns increasing in voltage and frequency until a severe grand mal seizure occurred. Figure 2 presents the changes in the electroencephalogram before and after promazine administration.

Case 2.—An 18-year-old woman, hospitalized because of a catatonic schizophrenic reaction, was given 150 mg. of promazine intravenously shortly after admission and 200 mg. orally at bedtime. The next day she was given 200 mg. orally on arising and 200 mg. orally at noon. That afternoon the patient had two grand mal seizures, the first approximately one hour after drug administration and the second three hours later. There was no history of spontaneous seizures. An electroencephalogram disclosed a poorly developed dominant rhythm of 8½ per second and some slow 2 to 4 per second activity of medium voltage. There were frequent single and multiple slow spike discharges occurring independently on both sides. During hyperventilation the abnormalities were accentuated.

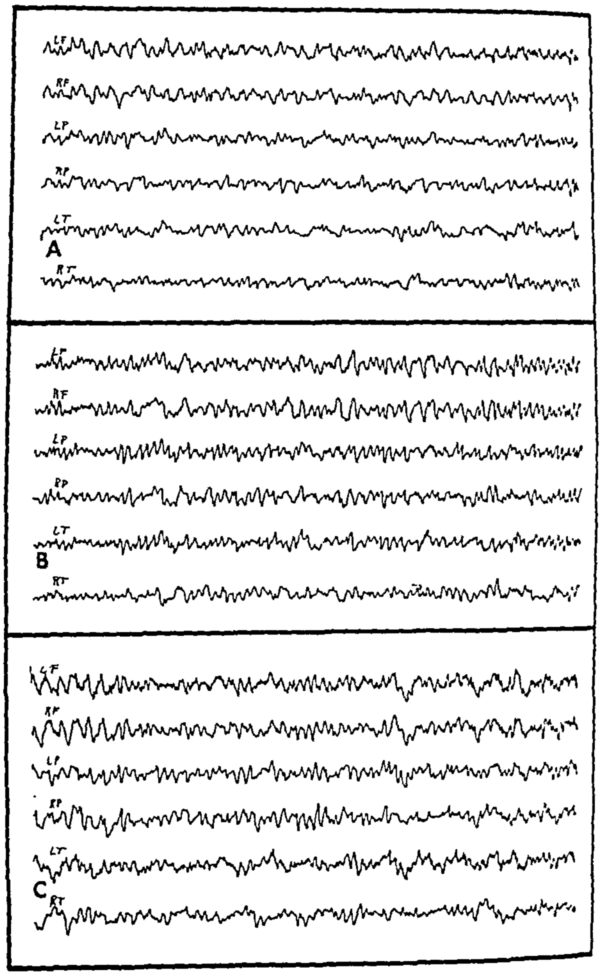

Fig. 1.—Effect of promazine and pentylenetetrazol on electroencephalogram. *A*, pretreatment electroencephalogram. *B*, [illegible] minutes after administration of 700 mg. of pentylenetetrazol; *C*, 30 minutes after administration of 200 mg. of promazine.

3.–A 40-year-old woman with *no* previous history of
y was given 50 mg. of *promazine* four times a day be-
of severe agitation. The dose was *rapidly increased* to
g. four times daily. After four days at this dosage, the
had a grand mal seizure. *Unfortunately, an electro-*
alogram could not be obtained.

case reports of the four subjects who demon-
l an increased frequency of seizures during the
istration of Wy-1107, a new phenothiazine de-
e, are presented below. Electroencephalograms
not be obtained on these subjects either before
ing the period they were receiving the drug.

4.–A mental defective (IQ 38) with a history of a
grand mal seizure in January, 1956, was given *Wy-1107*
of behavioral problems. Anticonvulsant therapy had not
rescribed. The administration of Wy-1107, 50 mg. three
day, was begun on Oct. 12; four days later the patient
a severe grand mal seizure. The ataraxic drug was
ately withdrawn, and no further seizures occurred, even
anticonvulsant therapy was not instituted.

5.–A 12-year-old post-traumatic mental defective was
Vy-1107 because of frequent episodes of agitation char-
d by self-mutilation and destructiveness. There had been
ry of grand mal seizures until she was 7 years of age.
subsequent five years, she was free of such attacks, and
last several years anticonvulsant therapy had been dis-
ed. *She was given 50 mg. of Wy-1107*, three times a
ginning on Oct. 12, 1956. *On Oct. 29 she had a severe*
nal seizure. The drug was immediately withdrawn, and
had no further seizures to date.

6.–A 15-year-old idiot with a congenital anatomic
defect was *placed on Wy-1107 because* of periodic
s of agitation. The patient had had four grand mal
over a 12-month period prior to ataraxic therapy but
t received anticonvulsant medication. He was started on
with Wy-1107, 50 mg. three times a day, on Oct. 12,
days later medication was discontinued because of a
mal seizure. Several days after the seizure, because of
agitation, the patient was given 75 mg. of chlorproma-
nd within two hours he experienced another grand mal
Chlorpromazine was withdrawn, and anticonvulsant
was initiated.

7.–A 30-year-old male with post-traumatic mental de-
(IQ 26) was placed on therapy with Wy-1107 because
avioral problems. He had a *history of grand mal seizures*
e age of five, but his *condition was fairly well controlled*
iphenylhydantoin (Dilantin) and phenobarbital, and he
en free of attacks for four months prior to phenothiazine
. The patient was started on therapy with 50 mg. of
07, three times a day, on Oct. 12, 1956. The dose was
d on Nov. 13. Two days later he had a severe grand mal
lasting for over 15 minutes. Wy-1107 therapy was dis-
ed, and the patient has had *no* further seizures.

Comment

present observations indicate that the pheno-
ne derivatives have the capacity to induce
es, particularly in those individuals with a pre-
ition to such attacks. Convulsions were noted,
ver, in one patient with no history of seizures, but
tunately electroencephalograms could not be ob-
l to rule out a possible latent epilepsy. The sei-
were all grand mal in type and occurred for the
part while the subjects were ingesting relatively
doses of the drug. It is interesting that adminis-
n of small isolated doses of promazine did not activate abnormal cerebral electrical patterns nor induce seizures in subjects known to have paroxysmal cerebral dysrhythmia. It may or may not be significant that electrical activation was not observed with promazine even after susceptible patients had received large oral doses of pentylenetetrazol, a known cerebral excitant. These observations suggest that the phenothiazines in single relatively small doses do not predispose to seizures and that promazine and pentylenetetrazol may not be synergistic and may possibly exert their convulsant effect by different mechanisms. In fact, the induction of sleep and the abolition of tension artifacts following promazine administration suggest that this drug may be a useful adjuvant in the diagnosis of incipient epilepsy.

There can be little doubt, however, that all the phenothiazine derivatives studied, when administered orally in large doses to susceptible patients, have the capacity to precipitate convulsions. Apparently, neither alteration of chlorpromazine by removal of the chlorine atom on the three position of the phenothiazine nucleus nor the substitution of an ethyl group on the terminal nitrogen atom of the promazine side-chain alters this capacity. Prochlorperazine (Compazine) maleate, the most recently introduced phenothiazine derivative, has also been reported to cause convulsions when large doses are administered to psychotic subjects. It may be of some interest that certain of the antihistamines from which the phenothiazines were originally derived (diphenhydramine [Benadryl] and tripelennamine [Pyribenzamine] hydrochloride), hav-

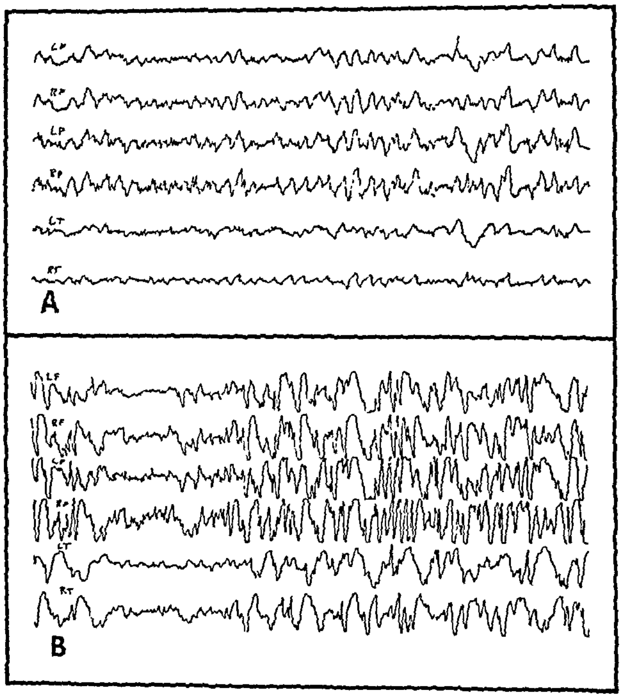

Fig. 2 (case 1).–Changes in electroencephalogram after administration of promazine. *A*, pretreatment electroencephalogram. *B*, after administration of promazine.

ing similar side-chains, have also been reported to induce seizures in patients with a history of predisposition to such attacks.

The mechanism by which large doses of the phenothiazine derivatives enhance susceptibility to seizures is not readily apparent. The ambivalent action of phenothiazines in reducing the convulsive threshold and simultaneously causing sedation is in marked contrast to the seemingly straightforward depressant action of the barbiturates. Although the exact mechanism by which the barbiturates produce their effects is unknown, it is generally agreed that they cause a descending depression of the neuroaxis, beginning with the phylogenically higher centers. The phenothiazine derivatives, on the other hand, apparently induce their effects primarily by influencing the activity of the brain stem reticular formation. Rinaldi and Himwich[6] have reported that chlorpromazine and barbiturates depress the electrical activity of the mesodiencephalic alerting system. It has been recognized for some time that, with the induction of sleep, abnormal cerebral electrical activity may be accentuated; in fact, this procedure is routinely employed to facilitate the diagnosis of epilepsy. It is possible, therefore, that the epileptogenic propensities of the phenothiazine derivatives may be due to their failure to induce appreciable cortical depression to compensate for subcortical sedation.

The available information regarding the chemical changes associated with convulsant activity indicates that such activity imposes an excessive demand on cerebral energy production mechanisms, as evidenced by the increased rates of cerebral blood flow and oxygen consumption noted during convulsion. It is generally agreed, however, that these changes are not etiological but the result of the convulsion, since they occur after the onset of the appearance of abnormal neural discharges.

Since convulsions may occur during hypoglycemia, hypoxia, and after the administration of drugs (i. e., fluoroacetate or cyanide) which inhibit certain intermediate cerebral oxidative reactions, it would seem that interference with cerebral energy production or its utilization may be primarily responsible for their initiation.

Previous studies[7] on the effects of phenothiazine derivatives on cerebral hemodynamics and metabolism have failed to disclose impairment of either total cerebral circulation or oxygen utilization after their administration. These observations suggest that subcortical depression following their administration cannot be attributed to interference with intermediate cerebral oxidative reactions and are more likely due to either decreased production of high energy compounds or inhibition of utilization of such compounds. In vitro studies by Grennell and others[8] and Bernsohn and coworkers[9] strongly suggest that the phenothiazine derivatives (chlorpromazine and promazine) interfere with the utilization of adenosinetriphosphate (a high-energy phosphate compound) by inhibition of the enzyme adenosinetriphosphatase.

Particularly interesting in the above regard studies of Abood and Gerard,[10] who demonst phosphorylation defect in the brains of mice s ible to audiogenic seizures. The primary metabolic disturbance in these animals accord them "seems to be related to the phosphorylati tem in general. Both energy degradation, as ind by the lowered adenosinetriphosphatase, and synthesis, as indicated by lowered P/O ratios creased specific activity of high energy phosphat significantly depressed in the audiogenic mice during the susceptible period." These authors that their findings lend support to the hyp that functional disturbances in the central n system are associated with disturbed phosph tion. It is interesting, however, that the chemical ations noted were apparently absent in the regi the brain (i. e., brain stem) in which the phen zine derivatives presumably cause the greatest tion of adenosinetriphosphatase. The basic data rently available at least indicate that the mech by which the various phenothiazine derivatives i or increase the susceptibility to seizures may b interference with phosphorylation mechanisms.

It would appear advisable in view of the p observations to exercise some caution when ad tering the phenothiazine derivatives to patients a history of seizures or to patients known to have organic brain damage or latent epilepsy who the cally may have some predisposition to seizures. tainly in such cases anticonvulsant medicame being administered, should not be withdrawn. If a predisposition to seizures is considered to be p but has not previously required anticonvulsant th it would seem to be advisable to institute such th prophylactically if administration of phenoth derivatives is intended. If phenobarbital is us potentiation of the depressant properties of the p thiazine derivatives should be kept in mind.

Summary

Clinical observations were made concerning t cidence of epileptiform seizures in patients re several phenothiazine derivatives (chlorpro promazine, and Wy-1107 [10-(3-diethylaminop phenothiazine]). All of these drugs in relatively doses appeared to have an epileptogenic te more marked in seizure-susceptible individuals. ever, in subjects experiencing alcohol or barb abstinence syndromes, the effect was obscured normal incidence of withdrawal convulsions.

Single oral doses of promazine in relatively amounts did not produce increased cerebral el activity in seizure-susceptible subjects, even wh were "primed" with oral doses of pentylenetetra is possible that the epileptogenic mechanism latter drug, which is a cortical stimulant, diff that of the phenothiazine derivatives. The latter by depressing the brain stem reticular format lease abnormal cortical activity from subcortic trol, as tends to occur when sleep is indu epileptic subjects. It would seem advisable to

n in administering phenothiazine derivatives to e-susceptible individuals, all of whom should bly receive anticonvulsant medication if these :ics must be given.

:ict of Columbia General Hospital, 19th and E streets 3) (Dr. Fazekas).

study was supported in part by a research grant from tional Institute of Neurological Diseases and Blindness of tional Institutes of Health, U. S. Public Health Service.

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RAYNAUD'S DISEASE IN PRIMARY PULMONARY HYPERTENSION

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Vasoconstrictor spasm involving the extremities and causing severe local ischemia was observed in three patients. In each there was also evidence of pulmonary hypertension which was primary in the sense that no significant parenchymal lung disease or congenital cardiac defect could be demonstrated. The coincidence of the peripheral vascular spasm with pulmonary hypertension in these patients suggests the possibility that the latter condition might likewise be a spastic vasomotor process involving the pulmonary arterioles.

ary pulmonary hypertension is recognized more ntly since the development and application of c catheterization. The etiology remains obscure. elationship of primary pulmonary hypertension er vascular disorders, functional or organic, is ved. It is the purpose of this communication to , for the first time, the association of Raynaud's e in three patients with primary pulmonary tension.

nary pulmonary hypertension is a condition char- :ed clinically by exertional dyspnea, exertional pe, weakness, anginoid pain, and eventually signs ymptoms of failure of the right side of the heart. ulmonic second sound is accentuated and fre- ly "split." There may be a soft diastolic murmur monic insufficiency.[1] Chest x-ray and fluoroscopy right ventricular enlargement, prominence of ulmonary artery segment, but no left atrial en- nent. Normal or decreased vascularity of the peripheral two-thirds of the lung fields is noted. The electrocardiogram usually confirms the presence of right ventricular hypertrophy. Cardiac catheterization reveals increased right ventricular and pulmonary artery pressures and a normal pulmonary artery "wedge"

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the Jewish Chronic Disease Hospital, the United States Public Service Hospital, Staten Island, New York, and the State University York College of Medicine.

pressure in the absence of failure of the left side of the heart. The cardiac output is low. Although the arterial oxygen saturation is usually normal, an increased arteriovenous oxygen difference exists because of the low cardiac output. Pulmonary function tests are within normal limits. Autopsy studies reveal right ventricular hypertrophy and dilatation of the main pulmonary arteries. Pulmonary arteriolar intimal sclerosis may or may not be present. Medial hypertrophy is occasionally found.[2] There is no significant pulmonary parenchymal disease.

The diagnosis of primary pulmonary hypertension is made by excluding any etiology for secondary pulmonary hypertension, namely, (1) increased pulmonary blood flow secondary to a left to right shunt in congenital heart disease; (2) left ventricular failure; (3) anoxia; (4) reduction of the pulmonary vascular bed by emboli, endarterial sclerosis, and pulmonary fibrosis; and (5) mitral stenosis.

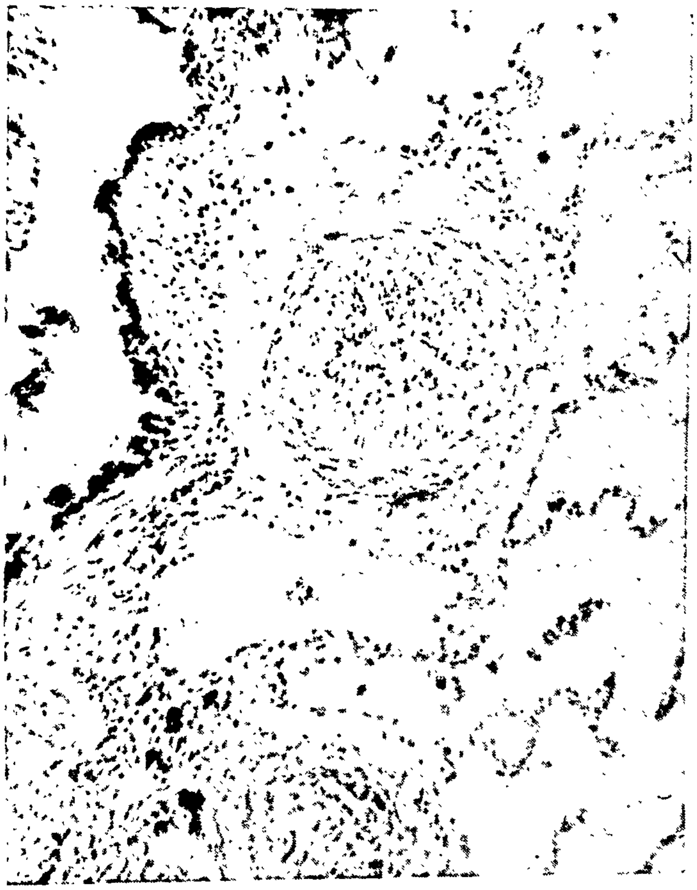

Fig. 1.—Microscopic section of lung revealing intimal sclerosis of pulmonary arterioles.

Because obstructive endarteritic lesions may not be present, some have suggested that the mechanism in this disorder is a spastic vasomotor process involving the precapillary pulmonary arterioles.[1b] How this is mediated is an open question. Some do not accept this concept, citing the lack of conclusive proof of autonomic vasomotor control in the lungs.[3] The fact that our three patients with primary pulmonary hypertension should also exhibit peripheral vascular vasomotor dysfunction (Raynaud's disease), suggests more than a chance relationship and supports the concept of a vasospastic process in primary pulmonary hypertension.

Report of Cases

Case 1.—A 47-year-old male first noted blanching and numbness of his fingers on exposure to cold in 1947. The toes and distal parts of the feet were also occasionally involved during the next several years. Cyanosis and rubor were noted to follow the pallor. Pain was inconspicuous, but numbness and tingling were constantly associated with the color changes, particularly in the upper extremities.

In 1951 he reported to the clinic of the U. S. Public Health Service Hospital, Staten Island, N. Y., complaining of exertional dyspnea of increasing severity of two years' duration. Physical examination revealed cardiomegaly and marked accentuation of the pulmonic second sound. Chest x-ray and fluoroscopy revealed enlargement of the right ventricular outflow tract and a distinctly dilated and pulsating pulmonary artery. The lung parenchyma was normal. The electrocardiogram revealed right ventricular hypertrophy. Complete cardiopulmonary evaluation included cardiac catheterization, angiocardiography, pulmonary function studies, and oxygen saturation studies. Catheterization of the right side of the heart revealed the pulmonary artery pressure to be elevated to 88/50 mm. Hg. The cardiac index was 2.13 liters per minute per square meter of body surface area. The arterial oxygen saturation was 94%, but the arteriovenous oxygen difference was increased to 7.6 ml. per 100 cc. There was no evidence of intracardiac shunt. Vital capacity, maximum breathing capacity, residual volume, and index of intrapulmonary mixing were within normal limits. Exploratory thoracotomy with lung biopsy confirmed the diagnosis of primary pulmonary hypertension. The microscopic section of the lung (fig. 1) revealed intimal sclerosis of the pulmonary arterioles. No recent or organized emboli were recognized.

The patient became disabled in 1953 because of progressive dyspnea, easy fatigability, and peripheral edema. He was treated with digitalis, mercurial diuretics, and sodium restriction. The Raynaud's phenomena have persisted bilaterally and have been relatively unaffected by a sympathectomy (T-1 to T-6) on the left performed at the time of thoracotomy in 1951.

Tolazoline (Priscoline), 50 mg., given orally four times a day, almost completely prevented the Raynaud's phenomena. In addition, the patient claimed some increase in his exercise tolerance. Unfortunately, persistent hiccoughs necessitated reduction in dosage and eventual withdrawal of the tolazoline.

Case 2.—A 41-year-old female was in good health until 1951, when she noted blanching of all the fingers up to the palm when exposed to the cold. There was gradual progression to a degree that constant warmth was necessary to prevent pain. Trophic changes of the finger tips were evident later. Oral medication was ineffective. In 1953 bilateral thoracic sympathectomies were performed, resulting in return to normal of the upper extremities except for blanching of the fingers on exposure to cold. Six months later, during the winter, she developed Raynaud's phenomena in the toes. She subsequently had bilateral lumbar sympathectomies performed in the summer of 1954, with good results.

Shortly after the final sympathectomy she began to experience episodes of dyspnea, weakness, and dizziness. These occurred only while she was standing and usually after exertion. She had numbness and tingling of the body during some of the episodes and fainted on several occasions. No convulsive motions were noted, but incontinence occurred. The exertional dyspnea became progressively more severe by January, 1956, when she was admitted to the hospital

The essential clinical features included (1) a loud and "split" pulmonic second sound; (2) blood pressure, 135/100 mm. Hg with no appreciable change on lying, sitting, or standing; (3) enlarged right ventricle and pulmonary artery with normal-sized left ventricle and left atrium; (4) an electrocardiogram typical of right ventricular hypertrophy; and (5) reproduction of some of her symptoms by hyperventilation.

Three months later, ankle edema was present. She was rehospitalized for treatment and further study in April, 1956. She was found to be in both right and left ventricular failure. Over the upper part of the body there were found numerous flat, brownish macular lesions, 1 cm. in diameter, which blanched completely on pressure. At this time, evaluation included complete pulmonary function studies, arterial blood gasometric analysis at rest and after exercise, and determination of urinary excretion of 5-hydroxyindoleacetic acid. The lung volumes were slightly reduced. The residual volume was normal, as was the index of intrapulmonary mixing. The findings were considered to indicate restrictive lung disease consistent with pulmonary congestion. The arterial oxygen saturation was 92.1% and 92.2% at rest and after exercise respectively. Breathing 100% oxygen only raised the arterial oxygen saturation to 93.2%. The urinary excretion of 5-hydroxyindoleacetic acid was normal, thus excluding the malignant carcinoid syndrome with hyperserotoninemia.[4] Skin and muscle biopsy were negative for collagen disease.

The patient was digitalized, given mercurial diuretics, and discharged with the diagnoses of primary pulmonary hypertension and Raynaud's disease.

Case 3.—A 73-year-old female was observed during the terminal phase of her illness. She gave a history of typical color changes in the hands and fingers with subsequent trophic changes and ulcerations. She suffered from progressive failure of the right side of the heart for two years prior to her death. She was admitted in profound failure of both sides of the heart. She had a loud "split" pulmonic second sound, an apical systolic murmur, and no systemic hypertension, but she showed cardiomegaly and right ventricular hypertrophy. The trophic skin changes of the fingers, with ulcerations and fissures, were remarkable. Arterial pulses were present. There were no other stigmata of scleroderma. The L. E. cell preparation was negative. Autopsy demonstrated the cardiopulmonary findings of primary pulmonary hypertension. Pulmonary arteriolar sclerosis was marked (fig. 2).

Comment

The lack of obstructive endarteritic changes in some cases of primary pulmonary hypertension suggests a primary neurohumoral mechanism for the increased pulmonary vascular resistance.[1b] The rich innervation of the pulmonary vasculature by both sympathetic and parasympathetic fibers supports this hypothesis.[5] However, attempts to demonstrate a vasomotor effect have yielded inconclusive results. Hemodynamic studies in man employing adrenergic blocking agents (hydergine, dihydroergotamine, tolazoline) and ganglion-blocking agents (hexamethonium and tetraethylammonium chloride) have yielded varying results. In some studies, a fall in pulmonary artery pressure and a decrease in calculated pulmonary vascular resistance have suggested a direct effect on the vasomotor system of the lungs.[6] In other studies, the effects of the drug could be explained by a direct action on the pulmonary vessels or the cardiac output itself, rather than by a neurohumoral action.[7] An active role for the autonomic nervous system in the determination of vessel tone in the lung has been questioned by Cournand,[8] who stresses that the pulmonary vascular bed reacts passively with changes in pulmonary blood flow and volume. Pulmonary artery pressure, flow, and volume relationships in turn depend on the output of the heart itself and on the peripheral pressure, flow, and volume relationships. The inconclusiveness of the pharmacological studies in man is further heightened by the known effects of these blocking drugs on the peripheral resistance, the heart rate, and the output of the heart itself. This latter peripheral effect has been eliminated in animal experiments where the left side of the heart and peripheral circulation have been bypassed. Recent studies indicate that the pulmonary vasculature does respond to drugs such as arterenol and acetylcholine with active vasoconstriction and vasodilatation respectively.[9]

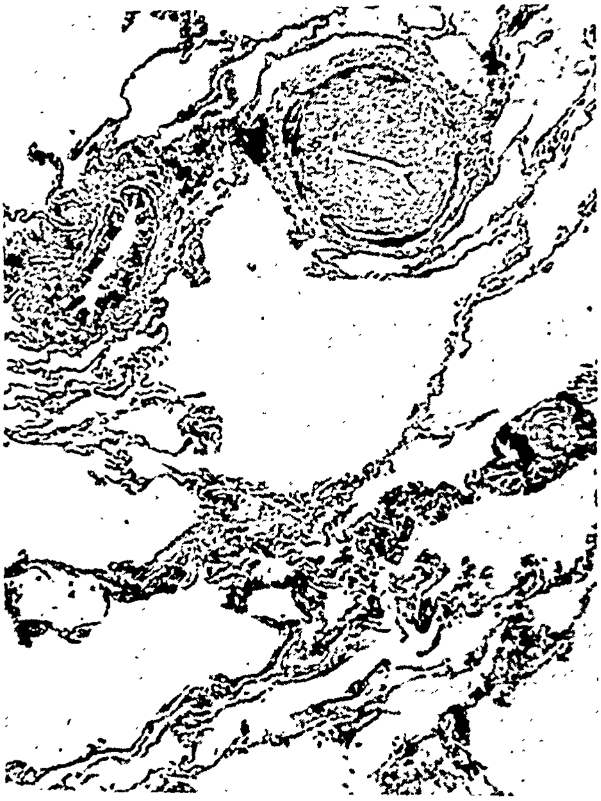

Fig. 2.—Microscopic section of lung revealing arteriolar sclerosis.

It is apparent that pulmonary resistance may be affected by changes in peripheral flow, by the intrinsic reaction of the pulmonary vessels to humoral agents, and possibly by neurogenic influences. The association of Raynaud's disease with primary pulmonary hypertension supports the hypothesis of a hyperactive neurohumoral mechanism in primary pulmonary hypertension, since Raynaud's disease is a known vasomotor disorder caused by overactivity of the sympathetic nervous system.

Summary

The association of Raynaud's disease in three patients with primary pulmonary hypertension is offered as indirect evidence in support of a hyperactive neurohumoral vasomotor mechanism in primary pulmonary hypertension.

Jewish Chronic Disease Hospital, E. 49th St. (3) (Dr. Kroop).

Case 2 is reported through the courtesy of Dr. William Hollander, Massachusetts Memorial Hospital, Boston, and case 3 through the courtesy of Dr. Robert Katase, U. S. Public Health Service Hospital, Baltimore.

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The Physician of Tomorrow.—Every generation has its ideal doctor. The ideal doctor of today will differ from the ideal doctor of tomorrow. He has always been shaped by the society in which he lives, and his function changes with the times. It has been said that he has always been a subtle blend of the social, economic, and technical forces existent at the time. He has been the product of his education and training, and his practice is often modified to fit the mores of his community. With advances in medical education it is well to develop some foresight into the future role of the physician in society and attempt to make a blueprint of what is to come. The new physician should be adequately trained in science, but he should be more than a scientific specialist, skilled in his specific branch of work. He must be an educated person who is welcome in society for his own sake, and he must remain in close touch with the people he serves. His object will be to direct his efforts toward the prevention of illness and the healing and rehabilitation of the sick by weaving science and humanism into one fabric. This combination in a single picture sets the goal that the new physician must strive to reach. Since too little is known about preventive medicine, and since it frequently breaks down or fails, the doctor will continue to be the therapist, or the member of a team of therapists. The public is interested in a healthy and happy life. The late Henry L. Mencken said that it was a doctor's function to make it possible for his patients to go on doing the pleasant things that are bad for them—smoking too much, eating too much, drinking too much and the rest of them—without killing themselves sooner than is necessary. To fulfill such a function will require more knowledge concerning health as well as disease. Specialization in all the sciences will increase, and research will be promoted by all means available. There will be a need for more specialists in psychiatry and in the social sciences, and these specialists will need to intensify sociologic research, which aims at studying the life cycle of man in his social environment. I should like to end this section on the function of the practitioner by saying that if he is to apply his knowledge and his training in the most effective way for the benefit of people, he must have access to facilities that will enable him to do so. This is a local community problem.—C. S. Keefer, M.D., Medical Education Tomorrow, *The New England Journal of Medicine*, Oct. 4, 1956.

Vol. 165, No. 10

TREATMENT OF PEMPHIGUS WITH CORTICOSTEROIDS

STUDY OF FIFTY-TWO PATIENTS

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and
Marvin Dannenberg, M.D., New York

Pemphigus was treated in 270 patients during the 40-year period before the introduction of steroid therapy and has been treated with steroids in 52 patients during a 4-year period since that time. The initial site of the bullae was the oral mucosa in nearly 55% of the cases. The mortality rate before steroids was more than 90%; in the steroid-treated series it was 33%. The steroids used were corticotropin, cortisone, hydrocortisone, and prednisone, and in the dosages needed to control the pemphigus they generally produced the characteristic side-effects, such as moon facies, hyperpigmentation, and psychotic symptoms. Two patients so treated died of gastrointestinal hemorrhages, which had not been observed in the presteroid series. Despite these disadvantages steroid therapy is at present the treatment of choice for pemphigus.

There have been two previous studies of pemphigus reported from the dermatological wards of Bellevue Hospital. The first comprised a survey of 170 patients from 1911 to 1941, and the second was a clinicopathological study of an additional 100 patients from 1941 to 1951.[1] Similar studies have been presented from other institutions.[2]

The main purpose of this paper is to compare the results of treatment in the presteroid period with the experiences obtained after a five-year study (1951-1955) of 52 patients suffering from pemphigus who were treated with the corticosteroids. This continuous study, we believe, is unique in that a total of 322 cases have been reported during the period from 1911 to 1955, the majority of the patients having been observed by one of us (M. J. C.) prior to and during the corticosteroid period.

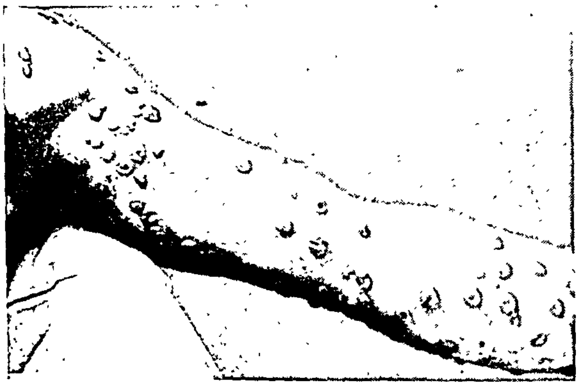

Fig. 1—Pemphigus vulgaris, showing globular bullae arising from normal skin.

In the classification of pemphigus there are two broad divisions. One division is pemphigus vulgaris, the variations of which include pemphigus erythematosus (Senear-Usher syndrome), pemphigus vegetans, and a benign chronic form, with good prognosis, referred to by some dermatologists as pemphigoid.[3] The other division, pemphigus foliaceus (fogo selvagem), stands alone, with a better prognosis as to life (the patient may live several decades) but a poor outlook because of prolonged, incapacitating suffering and complete dependence. Of the 52 patients seen in the five-year period, 42, or 81%, had pemphigus vulgaris. The remaining 19% was comprised of five patients with pemphigus foliaceus, four with pemphigus erythematosus, and one with pemphigus vegetans.[4] The percentage of men and women in each category was approximately equal. Of the total number, 28, or 54%, were women, and 24, or 46%, were men. Some of the types of pemphigus are illustrated in figures 1 to 4.

A study was also made of the distribution of the 52 patients according to race and national origin. Of these patients, 50 were of the white and 2 were of the Negro race. Thirty of the white patients (or 60%) were Jewish; 19 of these were born in Russia, 8 in the United States, and 3 in Poland. Twenty-two patients (or 40%) were non-Jewish; of these 7 were born in Italy, 7 in the United States (5 of Anglo-Saxon background and 2, Negro), 2 in Greece, and 1 each in China, Germany, Romania, Spain, Sweden, and Turkey. It is our impression that the percentage of Jews in this third report from Bellevue Hospital is lower and that of Italians (13%) is higher, although the position of incidence is unchanged.

According to a study of the age of onset of pemphigus in decades (fig. 5), none of the patients observed in this series were in the extreme decades

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Read before the Section on Dermatology at the 106th Annual Meeting of the American Medical Association, New York, June 7, 1957.

of life. Nor were there any patients in the third decade, pemphigus being rarely seen before the fourth or fifth decade. Seventy-eight per cent of the patients were in the sixth, seventh, eighth, and ninth decades, and 43% were in the seventh, eighth, and ninth decades. The patients in this series were in older age groups than those reported by others. This is easy to understand when one realizes that older patients suffering from a serious disease such as pemphigus, which is both physically and financially incapacitating, would after a time be referred to the wards of a city hospital such as Bellevue Hospital.

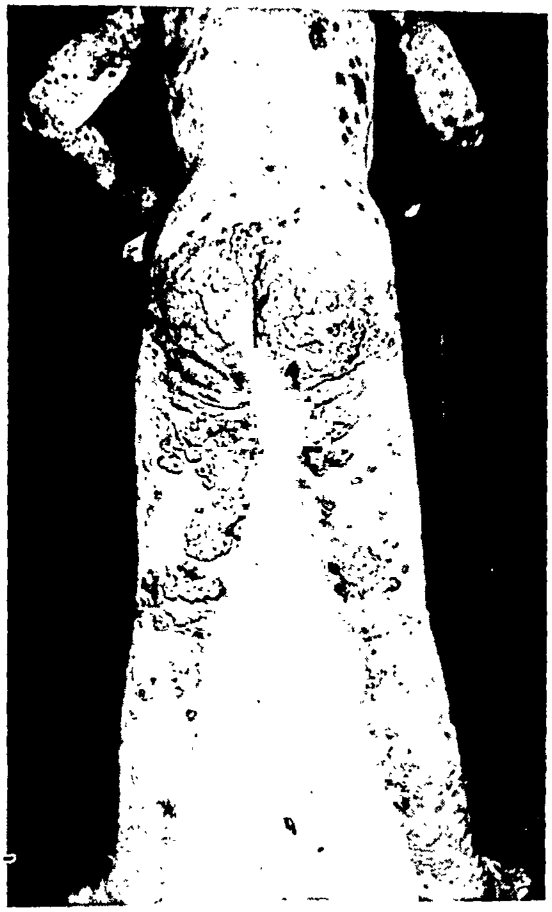

Fig. 2.—Pemphigus vegetans, showing sharply circumscribed, edematous, exudative, secondarily infected patches with outlying satellites.

Table 1.—*Initial Site of Pemphigus Bullae on Mucous Membranes, Excluding Five Cases of Pemphigus Foliaceus*

Site		Patients, No.
Mouth		26(55%)
Tongue—inferior, lateral, dorsum, posterior	4	
Lips	3	
Gingiva (after extraction of molar, 1)	6	
Buccal mucous membranes	13	
Nares		2
		28(59%)

The mortality rate in the sixth, seventh, eighth, and ninth decades approximates the incidence rate. There was a 78% incidence of pemphigus among patients over 50 years of age. The mortality rate for these decades was 76% (16 of the 21 deaths). There was a 43% incidence of pemphigus among patients over 60 years of age. The mortality rate was 50% (10 of the 21 deaths occurred in this age group). During the four and a half decades in which this disease has been studied, the over-all mortality rate has been reduced from more than 90% to about 33%.

Diagnosis of Pemphigus

The diagnosis of the different types of pemphigus was made by staff dermatologists who had had long experience in the clinical field. Confirmation by biopsy of exhibition of an intraepidermal bulla (fig. 6) and/or acantholysis (loss of prickle-cell layer and lysis of epidermal cells) was made in the majority of the cases.[5] The initial site of the bullae in pemphigus vulgaris was the mucous membranes in 28 (or 59%) of the patients. This is based on the findings in 47 of the 52 patients reported, since mucous membrane lesions do not occur in pemphigus foliaceus, of which type there were five cases (tables 1 to 3).

Table 2.—*Initial Site of Pemphigus Bullae on Cutaneous Surface, Including Five Cases of Pemphigus Foliaceus*

Site	Patients, No.
Scalp	3
Face (cheek, 1; nose, 1)	2
Back	7
Chest	4
Abdomen	4
Axillas	2
Upper extremities	1
Shoulder, right	1
	24(45%)

The high incidence of the mucous membranes as the first site of the initial lesion of pemphigus vulgaris is of importance in making an early diagnosis in this disease. The appearance of bullae of internal causation on the skin of a middle-aged individual would arouse suspicion regarding the possibility of a diagnosis of pemphigus. However, this is not so regarding mucous membrane lesions,

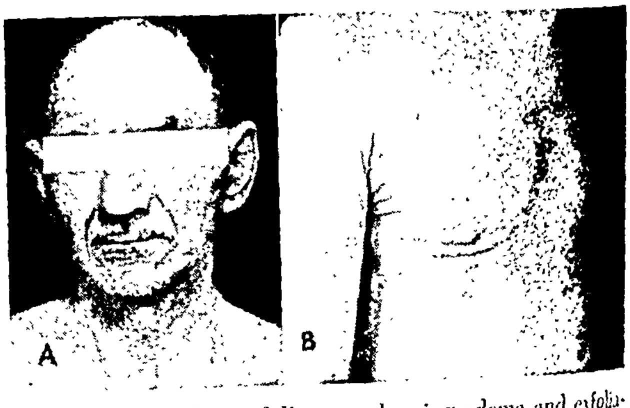

Fig. 3.—Pemphigus foliaceus, showing edema and exfoliation of skin on face (*A*) and on torso (*B*).

specially those occurring in the oral cavity. In ur experience with the three series of cases, the liagnosis of pemphigus vulgaris was the last one hought of by those who had examined the patient efore the confirmatory cutaneous lesions appeared, ven though the eruption was confined to the mouth or months and was resistant to therapy. Vincent's nfection of the mouth, desquamative gingivitis, angrenous stomatitis (noma), syphilis, vitamin eficiency, and drug eruptions were all entertained, ut not the diagnosis of pemphigus.

TABLE 3.—*Unusual Location on Mucous Membrane Surface of Secondary Lesions*

Site	Patients, No.
ulbar and palpebral conjunctivas	2
piglottis	2
arynx (vocal cords, 3; arytenoids, 1)	4
ladder	1 (?)
agina	1
norectum	1

Unruptured bullae of pemphigus vulgaris are rely seen on the oral mucous membranes, because eir thin walls are immediately ruptured by mastiition and deglutition. Persistent, eroded patches the oral mucous membranes, especially in the lult age group (as illustrated in figure 7), should ompt a thorough examination of the skin. After e exclusion of the aforementioned possibilities, ich a patient should be considered as having pemigus until proved otherwise. This is important, ecause early diagnosis and prompt, adequate cortisteroid treatment not only may save the life of e patient but also may prevent the distressing physiological and toxic side-effects of prolonged treatment of this type. Dentists and nose and throat specialists should be constantly on the alert regarding the appearance of pemphigus lesions on the mucous membranes of the oral cavity and the upper respiratory tract. It has been our experience with a few of the patients that the initial pemphigus vulgaris lesion of the skin persisted throughout the course of the disease and remained for several years after all other lesions on the skin and mucous mem-

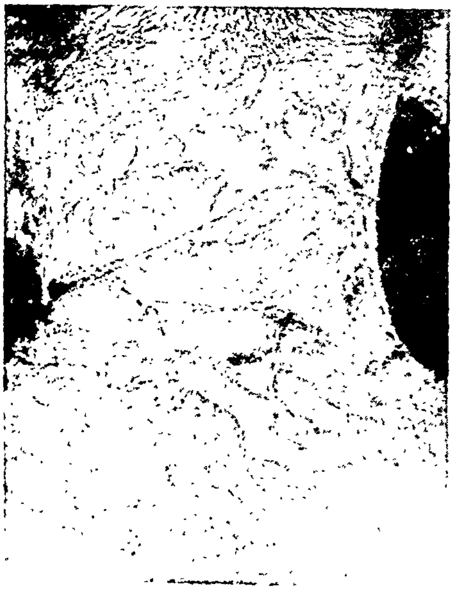

Fig. 4.—Pemphigus foliaceus, showing bizarre pattern iich is pathognomonic of this form of pemphigus and iich consists of polycyclic, imbricated plaques made up of escentic, flaccid bullae.

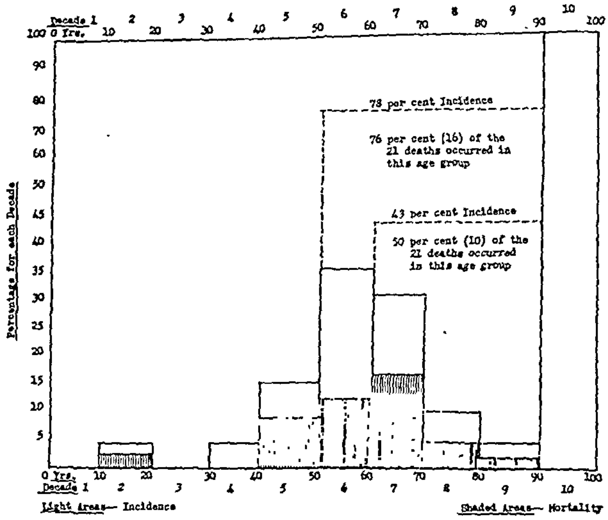

Fig. 5.—Age of onset of pemphigus in 52 patients according to decades.

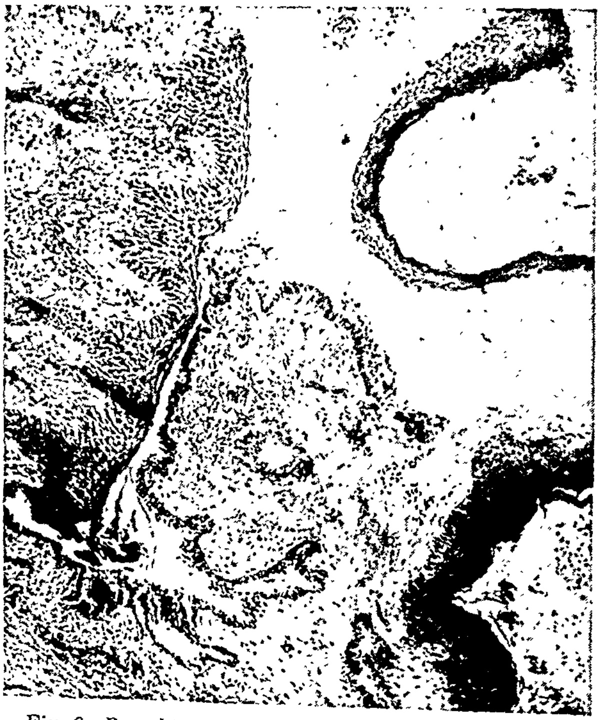

Fig. 6.—Pemphigus vulgaris, showing intraepidermal bulla and suprabasilar cleft extending to hair follicle (histopathological low-power view).

branes had disappeared and corticosteroid therapy had been discontinued. The mucous membrane lesions, especially those of the oral cavity, may persist in a localized, chronic form for a long time after all the cutaneous lesions have healed.

As in the two series reported previously from the dermatological wards of Bellevue Hospital, the 52 patients in this group had complete physical examinations, frequent consultations with the various services, and laboratory studies. They also followed a corticosteroid regimen, which consisted, among other things, of daily estimation of vital signs, body weight, and urinalysis. The diet was high-protein, low-salt, low-carbohydrate, low-fat, and, as near as possible, bland. The administration of hydrochloric acid buffering medicaments, such as calcium carbonate, magnesium oxide, aluminum hydroxide (Amphojel), and a compound of magnesium trisilicate and aluminum hydroxide (Gelusil), was routine. Adequate amounts of enteric potassium chloride tablets were administered to prevent retention of sodium and hypopotassemia. The broad-spectrum antibiotics were administered when necessary, usually when infection supervened, and were withdrawn as soon as possible.

Table 4.—*Physiological Untoward Effects of Administration of Corticosteroids*

Effect		Patients, No.
Moon facies		9
Buffalo hump		3
Fat pads (supraclavicular)		3
Cushing's syndrome		7
Cushing's obesity		3
Hyperpigmentation		9
Hirsutism		7
Amenorrhea		1
Plethora		8
Atrophy of adrenal cortex		1
Hyperplasia of adrenal cortex		3
Osteoporosis (fracture of vertebra, 3)		5
Acneform eruptions		1
Psychotic symptoms		13
Paranoia	1	
Suicidal attempts	3	
Euphoria	7	
Logorrhea	7	
Marked nervousness	4	
Tonic and clonic spasms	1	
Tremors	8	
Convulsions	1	

Clinical and laboratory findings, histological observations, and statistics have presented about the same picture in the three reports, except as they have been influenced by corticosteroid therapy in this study. The occurrence of physiological side-effects (table 4) and the complications induced by corticosteroid therapy (table 5) have added to the difficulties of the dermatologist in the management of a disease which heretofore was almost universally fatal. Table 6 gives associated diseases and conditions found in patients with pemphigus. Laboratory tests consisted of repeated urinalyses, blood cell counts, and blood chemistries, including the determinations of nonprotein nitrogen, urea nitrogen, serum sodium and potassium, glucose, cholesterol, and total protein levels and albumi- globulin ratios. The making of electrocardiogra and the taking of chest, spine, and long-bone roen genograms were routine.

Table 5.—*Combined Interdependent Toxic Manifestatio of Pemphigus and/or Corticosteroids*

Effect		Pati No.
Loss of weight		3
Loss of strength		2
Loss of appetite		2
Fever		2
Edema (pulmonary, 1; peripheral, 8)		9
Cutaneous moniliasis (antibiotics)		1
Mucous membrane moniliasis (antibiotics)		1
Oliguria		1
Operations		4
Appendectomy	1	
Gastric resection	1	
Exploratory laparotomy	2	
Gastric ulcer (before steroid therapy, 2; after steroid therapy, 3)		5
Duodenal ulcer (before steroid therapy, 3; after steroid therapy, 4)		7
Gastric ulcer with hemorrhage Duodenal ulcer with hemorrhage		5
Reactivation of gastric or duodenal ulcer		3
Tarry stool		8
Either gastric or duodenal ulcer with massive hemorrhage		5
Hematemesis		3
Coffee-ground vomitus		2
Abdominal pain Abdominal cramps		9
Abdominal tenderness		1
Abdominal softness (nonrigidity)		6
Abdominal rigidity		2
Perforation of gastric ulcer		1
Perforation of duodenal ulcer		3
Perforation of gastroduodenal artery		1
Peritonitis		1
Paralytic ileus (local)		1
Colitis		1
Hypertension		3
Cardiac collapse		4
Arteriosclerosis		5
Severe sclerosis of coronary arteries		1
Major thromboembolic phenomena		1
Minor thromboembolic phenomena		2
Occlusion of left circumflex coronary artery with infarct		1
Bronchopneumonia		5
Pulmonary tuberculosis		1
Pleurisy with effusion		1
Leukocytosis		13
Ecchymosis (persistent, 3)		6
Hematoma		6
Epistaxis		3
Vertigo		4
Temporary complete alopecia of scalp (Negress)		1
Infections		16
Abscess	5	
Abscess tooth	1	
Erysipelas	1	
Decubitus ulcer	3	
Paronychia (also seen in pemphigus independent of steroid therapy)	6	
Eye		12
Bullous lesions	4	
Conjunctivitis	4	
Glaucoma	1	
Prolapse of lens	1	
Injection of cornea (suffusion)	2	
Autopsies		6

Corticosteroid Therapy

The corticosteroids used in the treatment of th series of patients included corticotropin (ACTH dissolved in 5% dextrose and administered intr venously, repository corticotropin injection adm istered intramuscularly, and cortisone, hydrocor sone, and prednisone given orally in tablet form. Table 7 indicates the total daily dosage of the corticosteroids used in the treatment of pemphigus, and table 8 gives the cortisone equivalents in estimating the relative dosage effectiveness of the different routes of this form of treatment. The total daily dosage of the corticosteroids was considered moderate when the dosage fell within the range of the upper and lower levels. With these criteria as a guide, 4 patients received a minimal amount of corticosteroids in total daily treatment; 39, a moderate amount; and 9, an excessive amount. Patients were considered to have received inadequate treatment if the total duration of treatment or the total course of dosage was less than two weeks (there were four patients in this group). Minimal treatment was less than four to six weeks (there were 5 patients in this group); moderate treatment was six weeks to six months (there were 33 patients in this group); and excessive treatment was more than one year (there were 10 patients in this group).

Table 6.—*Associated Diseases and Conditions in Patients with Pemphigus*

Disease or Condition	Patients, No.
Paralysis agitans	3
Rheumatoid arthritis	4
Lymphoblastoma	1
Diabetes mellitus	6
Family history of diabetes mellitus	6
Hypoglycemic shock in diabetic	1
Elevated blood cholesterol (234 to 512 mg. per 100 cc.)	12
Gastrectomy for gastric carcinoma	1
Cholelithiasis	1
Jaundice	1

In the majority of the patients the corticosteroid treatment was continuous, combined, or alternating. In others it was interrupted or periodic because of the development of complications of the disease or of corticosteroid therapy. Some patients received an excessive amount of the corticosteroids for a short time; others received a moderate dosage for what was considered an excessively long duration. Excessive treatment with the corticosteroids did not necessarily mean poor prognosis, because half of the patients who had excessive daily or excessive total dosage survived. We believe that the disease was controlled in a number of patients because of the large initial doses necessary to cope with the severity of the disease. Some of the physiological untoward effects of the prolonged or excessive administration of the corticosteroids in treating pemphigus are illustrated in figure 8.

Fig. 7.—Pemphigus vulgaris, showing erosions on hard palate.

Table 7.—*Total Daily Dosage of Corticosteroids Used in Treatment of Pemphigus*

Was considered minimal when	
Corticotropin (I.V.)	was below 25 units
Repository corticotropin injection (I.M.)	was below 40 units
Cortisone	was below 50 mg.
Hydrocortisone	was below 40 mg.
Prednisone	was below 10 mg.
Was considered excessive when	
Corticotropin (I.V.)	was above 50 units
Repository corticotropin injection (I.M.)	was above 80 units
Cortisone	was above 500 mg.
Hydrocortisone	was above 400 mg.
Prednisone	was above 100 mg.

In the group of patients who received a moderate treatment regarding total dosage and duration, the recovery rate was twice as good, but in some of these patients the disease was of only moderate severity. The mortality rate was higher in those who received an inadequate or a minimal amount of treatment for the obvious reason that these were terminal or near-terminal cases, and they died before corticosteroid therapy could take therapeutic effect.

We believe it is now generally agreed that the earlier the diagnosis is made in pemphigus vulgaris and the earlier the corticosteroid treatment is instituted, the more favorable will be the prognosis. Less corticosteroid therapy will be required to bring the disease under control, and the patient may be maintained on a smaller daily dose. In this manner, also, the annoying physiological side-effects and the severe complications may be avoided.

Table 8.—*Cortisone Equivalents in Estimating Dosage Effectiveness of Corticosteroid Therapy*

Corticotropin (aqueous [I.V.])	1 unit = 10.0 mg. of cortisone
Repository corticotropin injection (I.M.)	1 unit = 5.0 mg. of cortisone
Corticotropin (aqueous [I.M.])	1 unit = 2.0 mg. of cortisone
Hydrocortisone (P.O.)	1 mg. = 1.2 mg. of cortisone
Prednisone (P.O.)	1 mg. = 5.0 mg. of cortisone

In the more severe cases, where the disease is extensive, accompanied by loss of weight, strength, and appetite, and where the painful eroded mucous membrane lesions interfere with mastication and deglutition, the nutrition of the patient is imminently jeopardized. The treatment schedule which we have found to be efficacious in bringing pemphigus vulgaris under control as rapidly as possible is to administer initial high doses of the corticosteriods. If the urgency is great, 25 units of corticotropin dissolved in 500 to 1,000 cc. of 5% dextrose may be administered daily intravenously over a six-to-eight-hour period in the hospital, or 40 units of repository corticotropin injection may be injected twice daily in the clinic or office. In less urgent but moderately extensive eruptions, 20 5-mg. tablets of prednisone, given by mouth daily until the disease is controlled, are more convenient, as effective, and less expensive. This daily dose is administered and continued for about a week after most of the pemphigus lesions have disappeared. The daily dose is then gradually reduced until the therapeutic maintenance dose is calculated. We have found that four, six, or eight tablets (20, 30, or 40 mg.) of prednisone are required for several weeks or longer. The majority of patients are finally free of lesions with a maintenance dose of three or four tablets daily. It has been advantageous to augment this routine with 40 units of respository corticotropin injection administered intramuscularly once or twice a week. It is unwise, however, to try to rid the patient of every last lesion by continuing his treatment on even a moderate dose schedule. If a lesion or two remain and the patient is not inconvenienced by their presence, the dose should not be increased, because such therapy may lead to serious complications. The benefits of corticosteroid therapy are illustrated in figure 9, which shows the condition of a patient's skin before and after treatment.

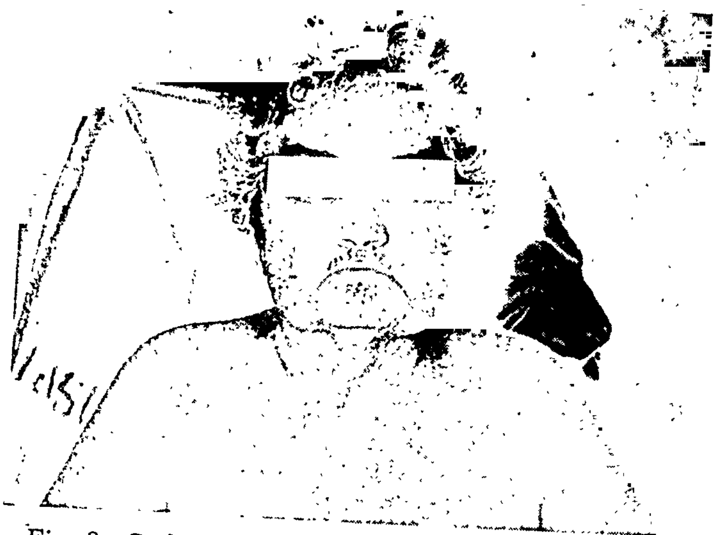

Fig. 8.—Cushing's syndrome in patient treated for pemphigus vulgaris with corticosteroids, showing edema of face, hyperpigmentation, plethora, and hirsutism.

The real problem in the treatment of several of these patients with pemphigus occurred when the eruption was controlled and the *status quo* maintained with small doses of the corticosteroids. Several patients would then develop the physiological side-effects and the complications of steroid therapy. Discontinuation of the drug would be followed by prompt recurrence of the disease, and resumption of corticosteroid therapy by the development of the complications referred to above. In the case of these patients, the decision has usually been made to treat the patient again with the corticosteroids or to increase the dose, in view of the hopeless prognosis of this disease when any other form of therapy is used. In older patients especially, sudden death may follow such complications as massive gastrointestinal hemorrage and perforation of a duodenal or gastric ulcer.

In the evaluation of the therapy of pemphigus vulgaris in this series of 52 cases, it should be kept in mind that, before admission to the dermatological wards at Bellevue Hospital, the majority (52%) of the patients had had previous corticosteroid treatment for pemphigus at other hospitals, in clinics, and by private physicians for variable periods of time ranging from two weeks to two years. It is necessary to consider this important fact in evaluating statistically the results of treatment. These patients were referred to Bellevue Hospital oftentimes because of the failure of inadequate corticosteroid therapy, because the disease was progressing, or because of the complications of the corticosteroid treatment. In the majority of the patients in this series the disease was extensive and severe—almost always with confirmatory mucous membrane lesions. A number already presented the complications of corticosteroid treatment.

We have found that pemphigus vulgaris and pemphigoid respond best to administration of the corticosteroids and pemphigus vegetans and pemphigus erythematosus respond not as well (in that order). The response of pemphigus foliaceus to even large doses of the corticosteroids over extended periods of time is torpid, temporary, and fraught with the often severe complications of this form of therapy. Pemphigus foliaceus is improved by administration of the antimalarial drugs, particularly quinacrine (Atabrine) hydrochloride.

Comment

Death occurred in the case of 21 (or 40%) of the 52 patients who were studied in the third report on pemphigus from the dermatological wards of Bellevue Hospital. Twenty of the 21 patients who died had pemphigus vulgaris; 1 patient had pemphigus foliaceus. Thirteen (or 62%) of the patients who died were Jews. This number of deaths parallels the incidence percentage among Jews in the series. Thirteen (or 62%) of the deaths occurred in women. Moreover, 28 (or 54%) of the total number of cases of pemphigus occurred in women. The Italians and those of Anglo-Saxon stock fared better than the Jews in regard to mor-

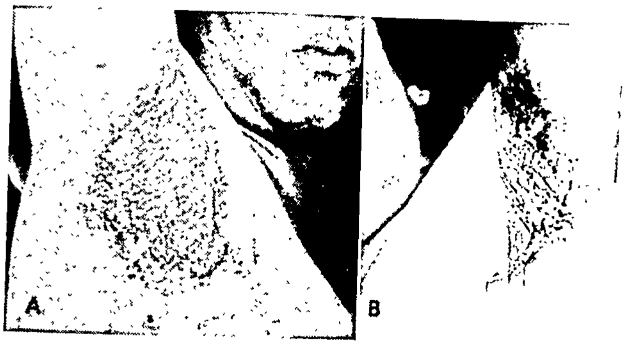

Fig. 9.—*A*, pemphigus vulgaris before corticosteroid therapy. *B*, pemphigus vulgaris after corticosteroid therapy.

tality. The mortality rates for the Italian group and for the combined Anglo-Saxon and Negro groups were equal—about 33%.

The over-all mortality rate of 40% should be corrected because, of the 52 patients studied, 4 received inadequate therapy, which would bring the net mortality rate to about 34%. This is probably still a higher figure than that of other series reported because of the older age groups represented in our series, the severity and extensiveness of the disease, and the inadequate but prolonged corticosteroid therapy before admission to Bellevue Hospital. Many of the patients admitted already presented the physiological side-effects or the complications of this form of therapy. Contributory causes of death are given in table 9. Table 10 is a summary of the most frequent causes of death among the 21 patients who died. The deaths in cases 4, 13, 15, 16, 19, and 20 cannot be ascribed to therapy, because all these patients received a minimal amount of the corticosteroids. However, in cases 13 and 16 the patients died of acute gastric or duodenal ulcers with hemorrhage.[6] In these two cases corticosteroid therapy may be implicated. In the presteroid therapy period, massive intestinal hemorrhage occurring in patients treated for pemphigus, with or without perforation of duodenal or gastric ulcer, was not observed.

TABLE 9.—*Contributory Cause of Death in Twenty-one Cases of Pemphigus*

Case No.	
2	Bronchopneumonia; arteriosclerotic heart disease
4	Progressive deterioration as result of pemphigus
6	Cardiac failure
7	Massive hematemesis from duodenal or gastric ulcer, likely but not proved
8	Gastrointestinal hemorrhage; possible perforation of peptic ulcer; localized peritonitis
9	Panpituitary failure; thrombophlebitis
13	Acute gastric ulcer with hemorrhage
15	Acute suppurative lobar pneumonia; acute fibrinous pleurisy; fatty changes in liver; occlusion of left circumflex coronary artery; recent infarct of heart
16	Gastrointestinal hemorrhage; peptic ulcer
17	Bronchopneumonia; hepatitis (jaundice); diabetes mellitus
18	Bronchopneumonia
19	Bronchopneumonia; cardiac failure
20	Bronchopneumonia
22	Acute ulcers of stomach with gastrointestinal hemorrhage; diabetes mellitus; atrophy of adrenal cortices
24	Unknown—progressive deterioration because of pemphigus
26	Possible perforation of duodenal ulcer; patient died as peritoneal cavity was entered for exploratory laparotomy
28	Subacute ulcer of stomach and duodenum; perforation of gastric ulcer with erosion of pancreatoduodenal artery with massive gastrointestinal hemorrhage
32	Bronchopneumonia
36	Bronchopneumonia; thromboembolic lesions of right and left pulmonary arteries; pulmonary infarctions; pleurisy with effusion
43	Progressive deterioration as result of pemphigus
44	Progressive deterioration as result of pemphigus

Summary and Conclusions

Fifty-two patients with pemphigus were studied on the dermatological wards of Bellevue Hospital between 1951 and 1955. This makes a total of 322 patients with pemphigus whose cases have been reported from Bellevue Hospital during the period between 1911 and 1955. Of the 50 white patients in the present study, 60% were Jews. Seventy-eight per cent of the patients were in the sixth, seventh, eighth, and ninth decades. The occurrence of pemphigus in men and women was approximately equal. The initial site of pemphigus bullae was the mucous membranes of the mouth in nearly 55% of the patients. The importance of this frequent site of occurrence is emphasized in an effort to assure early diagnosis and early effective treatment.

TABLE 10.—*Summary of Most Frequent Causes of Death in Twenty-one Cases of Pemphigus*

Bronchopneumonia	8
Progressive deterioration	4
Massive hemorrhage with perforation of duodenal ulcer	5
Perforation of duodenal ulcer	3
Perforation of gastric ulcer	1

The corticosteroids have proved to be the treatment of choice. The former high mortality rate of pemphigus (more than 90%) has been reduced to about 33%. A small percentage of the patients with pemphigus have been free of symptoms and signs for one, two, or more years without further corticosteroid treatment and with no residual effects of the disease. In others the disease has been controlled by daily maintenance doses of the corticosteroids. The corticosteroids have been of considerable value in the treatment of pemphigus vulgaris (the common type, 81%), of less value in pemphigus erythematosus, and of little permanent benefit in pemphigus foliaceus. The mortality rate probably may be further reduced by early diagnosis and prompt, adequate therapy with the corticosteroids. The cause of pemphigus is unknown, as is the reason for the high incidence of the disease among adult Jews.

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PRINCIPLES OF MANAGEMENT OF ALLERGIC DISORDERS WITH PREDNISONE AND PREDNISOLONE

WITH EMPHASIS ON CLINICAL AND LABORATORY CONTROL OF COMPLICATIONS

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The varied and severe complications that sometimes follow the therapeutic use of steroids have deterred some clinicians from using them, despite their frequently dramatic effectiveness. Five major complications, especially serious in children, result from hormone overdosage: Cushing's syndrome, growth arrest, diabetes mellitus, osteoporosis, and psychosis; in addition there is an increased susceptibility to bacterial and viral infection and a possibility of gastrointestinal hemorrhage and periarteritis. These were watched for closely during the use of prednisone and prednisolone in the treatment of a series of 39 children and 113 adults for seasonal or perennial allergies, atopic dermatitis, and other hypersensitive states. It was found that close surveillance of the patients rendered complications exceedingly few and that under these conditions the steroids used were extremely effective in relieving the symptoms of allergy over periods of many months.

Since 1949, when Hench and Kendall presented their first observations on the use of cortisone in arthritis (described at length in a later article[1]), there have been many publications on the usefulness of this compound in a great many clinical situations. The most dramatic effectiveness of cortisone and its later derivatives has been in the management of the allergic disorders, notably asthma, hay fever, the severe drug reactions, and atopic dermatitis.[2] The etiology of the latter continues to arouse discussion, particularly as to its classification as an allergic disorder, but atopic dermatitis shares with the recognizably allergic disorders a remarkable degree of responsiveness to the steroid drugs. In fact, it is tempting to include in the definition of allergic disorders reversibility by the steroids, with the expectation that future research will reveal the cellular biochemical changes common to them.

Among the newer synthetic derivatives of cortisone are prednisone (Meticorten) and prednisolone (Meticortelone), the delta-1 compounds characterized by an extra unsaturated double bond in the 1-2 position of the steroid nucleus. These agents, less prone to affect electrolyte metabolism, have been used more widely than the original cortisone, but a number of investigators have called attention to certain complications of therapy, particularly when carried out for prolonged periods.[3] These complications may be grouped broadly as those due to (*a*) hormone excess or (*b*) a pronounced anti-inflammatory and infection-promoting effect. These complications, with presumed mechanism, prevention, and management, are listed in tables 1 and 2.

Complications of Steroid Therapy

The great variety of complications of steroid therapy, many of which can result in death or severe morbidity, has commanded the greatest respect and interest of clinicians, of whom many have sounded sober warnings against the prolonged use of steroids in any but the most desperately urgent situations. Some have stated that they are, in our present state of knowledge, unwilling to use steroids at all. Certain provocative statistical data have been brought to bear in the argument, notably by Kern,[3k] in a recent communication, and some pediatricians with a special interest in allergic diseases have found little occasion to use the drugs since their introduction. They call attention to papers describing the fulminating course of otherwise innocent viral illnesses in steroid-treated children and adults[3j] and provoke an extremely fearful attitude toward their use.

Nevertheless, an awareness of the hazards; a knowledge of the mechanism of their production; close supervision of the patient before, during, and after institution of sterotherapy; and the prompt application of appropriate prophylactic and remedial treatment can greatly lessen the dangers of steroid usage and safely extend the range of its applicability.

Hormone Excess.—As indicated in table 1, there are some five major complications of excessive hormone dosage.

Cushing's Syndrome: The first of the major complications of excessive dosage is Cushing's syndrome, under which may be included all the manifestations of this condition, i. e., moon facies,

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Read in the Session on Allergy before the Section on Miscellaneous Topics at the 106th Annual Meeting of the American Medical Association, New York, June 5, 1957.

hirsuties, acne, striae, hypertension, fat deposition, edema, and diabetic tendency. The delta compounds are less prone to provoke these manifestations, and particularly so when used for the treatment of allergic disorders, since the dosage generally required for these is sufficiently small to permit an avoidance of the hypercortisonism with which the full-blown picture of Cushing's syndrome is associated. The syndrome may generally be avoided by restricting the amount of the steroid used; if and when some of the signs develop, they may either be tolerated if otherwise not injurious or reversed by a reduction of the dose of steroids and the addition of some other therapeutic agent. As far as is known at the present time, no irreversible injury results from maintenance of a state of adrenal steroid overdosage for a short period of time.

Growth Arrest: The phenomenon of growth arrest, which is very probably due to an inhibition of growth hormone activity from the anterior pituitary, is a problem with which the pediatrician is most likely to be concerned. The excellent studies by Blodgett and associates,[3h] however, give complete reassurance that it is possible to select a dose of the steroids which is in such ratio to body surface as to avoid significant growth arrest. That study clearly revealed that the arrest of growth is entirely reversible, in addition to being a function of dosage per square meter of body surface.

Table 1.—*Complications Due to Hormone Excess Encountered in Treatment of Allergy with Steroids*

Complication	Mechanism	Prevention	Management	Prognosis
Cushing's syndrome ..	Hormone excess	Avoid overdosage	Reduce dosage or eliminate steroids	Excellent
Growth arrest	Pituitary inhibition	Avoid overdosage (less than 7-8 mg./sq.m body surface area)	Reduce dosage	Excellent
Diabetes mellitus	Anti-insulin; accelerates gluconeogenesis	Blood sugar tests*; if familial, steroid glucose-tolerance test†	Increase insulin, reduce steroid dosage	Excellent (temporary, reversible)
Osteoporosis (bone fracture)	Antianabolic	High-protein diet; anabolic hormones; prevent immobilization; Sulkowitch tests; periodic spine x-rays	Withdraw steroids; anabolic hormones; high-protein diet	Good
Psychosis	Unknown	Withhold from prepsychotic patients	Withdraw steroids; shock therapy if necessary	Good (reversible)

* Fasting and 2-hr -postprandial blood sugar tests and glucose-tolerance test.
† Described by Fajans and Conn [5]

Diabetes: The problem of diabetes is not apparently significant in children, since such experienced clinicians as Dr. Alexis Hartman have not observed the development of diabetes in nondiabetic children undergoing long-term treatment with large doses of steroids.[4] Furthermore, while the child with known diabetes will require larger amounts of insulin during steroid therapy, he will revert promptly to the presteroid level of insulin tolerance when the steroids have been withdrawn. As indicated in table 1, the steroids exert both an anti-insulin effect, in blocking peripheral utilization of carbohydrates, and a central effect, which accelerates gluconeogenesis, as a result of which the carbohydrate tolerance of the treated individual decreases. It seems quite probable from recent studies that any diabetic whose disease is discovered as a consequence of steroid therapy should be considered to have been prediabetic and that, if the diabetes persists after withdrawal of the drug, the probability is that this was purely coincidental and that such a subject would have at one time or another developed diabetes in any event. Furthermore, a person who develops diabetes for the first time under the influence of steroid therapy is not likely at such time to develop the serious complications of diabetes, with the possible exception of rapidly advancing diabetic retinopathy, the relationship of which to steroid therapy is still a moot question. Nevertheless, it is highly desirable that all subjects, prior to therapy with steroids, have a blood-sugar determination, preferably in the fasting and two-hour postprandial periods; if there is any suspicion of the existence of diabetes or diabetic tendencies, then a full glucose-tolerance test should be done. In those individuals with a strong familial history of diabetes, it would be well to administer the steroid glucose-tolerance test devised by Fajans and Conn.[5] When diabetes does develop during the course of steroid therapy, it may be handled easily by dietary control, the administration of insulin, a reduction of steroid dosage, or a combination of these methods. The prognosis is excellent, and the carbohydrate tolerance generally is restored to its presteroid level at some variable time after withdrawal of the drug. We had one patient, 43-year-old man, who was treated with steroids during a short visit to St. Louis and who then returned to his home, where the drug was successfully withdrawn over a relatively short period of time. Approximately four weeks after the withdrawal of the steroids, he developed prominent symptoms of diabetes. He was found to have a characteristic diabetic carbohydrate tolerance and was treated with dietary restrictions for a period of time. His carbohydrate tolerance gradually improved, however, and he returned practically to the condition he was in prior to the time that steroids were used.

Osteoporosis: The occurrence of osteoporosis is one of the more unfavorable manifestations of Cushing's syndrome and one to which Burrage and his co-workers [3g] have called attention. The phenomenon results from the antianabolic effect of the steroids and the consequent interference with deposition of the bony matrix. In consequence, there is a fairly high urinary excretion of calcium, and it is possible to detect this by testing the urine by the Sulkowitch technique. A high-protein diet, administration of the anabolic hormones such as an appropriate combination of testosterone and estrogen or some of the newer synthetic hormones, and the prevention of immobilization are very useful in preventing the more serious complications of the tendency to osteoporosis. Periodic x-rays of the spine should be obtained in patients in whom an intractable disease requires prolonged maintenance therapy with the steroids. Should the complication develop, it would be well to withdraw the steroids, to administer the anabolic hormones in adequate dosage, and to be certain that the diet is high in protein.

Psychosis: The mechanism of the psychosis that can accompany steroid therapy is not yet known, and perhaps the most important method of avoiding this complication is the avoidance of the use of the agents in the management of persons with severe psychoneurotic or psychotic disturbances prior to the development of the condition for which steroid therapy is indicated.[37] When this kind of complication occurs, the drug should be withdrawn, if possible, and appropriate psychiatric therapy instituted under the guidance of a competent psychiatrist. The prognosis is usually good, since the syndrome is reversible. The more common minor central nervous system manifestations accompanying steroid therapy are insomnia, restlessness, aggressiveness, irritability, cyclic change of mood, and marked increase in appetite. When such manifestations occur, they are not necessarily persistent nor do they presage the development of a later more severe psychiatric disturbance.

Infection-Promoting and Anti-inflammatory Effects.—The remaining complications, listed in table 2, have to do with the fact that the steroids increase the severity of infectious processes and call particular attention to the most important of these and to the effect of the steroids as anti-inflammatory agents.

Tuberculosis: The steroid drugs have been repeatedly demonstrated to increase the virulence of the tubercle bacillus in the experimental animal, and an activation of the tuberculous process in the treated human subject is a complication that must be avoided. We prefer not to use the steroids in children with positive tuberculin tests unless the situation is life threatening, in which case we use the antitubercular drugs together with the steroids. Although there is an increasing utilization of the steroids in association with other antitubercular therapy in the treatment of various known manifestations of tuberculosis, it is highly desirable to avoid the unrecognized development of an active process. In both the child and the adult, a chest x-ray should be obtained before institution of therapy in order to be certain that there are no suggestive lesions that might be activated by the use of the steroid drugs. If an active process develops, steroid therapy should be discontinued and appropriate antitubercular therapy begun.

Histoplasmosis: The problem of histoplasmosis is very real in the Midwestern area and one about which clinically there are still large areas of ignorance. It seems quite probable, however, that the disease often runs a course which is quite similar to that of tuberculosis; accordingly, it should be the a priori expectation that the steroids might affect the progress of histoplasmosis in very much the same way. In the area around St. Louis, it is the custom to perform both histoplasmin and tuberculin tests, and we have seen several instances of chronic fibrotic pulmonary disease which had all the roentgenologic earmarks of tuberculosis in individuals with positive histoplasmin tests and negative tuberculin tests. In two such instances it was desirable to employ the steroid drugs, and in each instance, on the advice of experts in the field, isoniazid (INAH) was used together with the steroids. Steroids and isoniazid have been employed together for a period of 18 months in the management of one of these patients, a 46-year-old man with severe asthma and a fibrotic atelectatic retracted right upper lobe. There has been no evidence whatever of activation of the original disease process. The second patient is a 62-year-old male in whom a small fibrotic and calcified lesion of the right upper lobe has slowly increased in size, without any evidence of clinical activity, during a six-month period of steroid and isoniazid therapy. This patient has been off steroid therapy for the month prior to writing and is still under observa-

Table 2.—*Complications Due to Infection-Promoting and Anti-inflammatory Effect Encountered in Treatment of Allergy with Steroids*

Complication	Mechanism	Prevention	Management	Prognosis
Active tuberculosis	Inhibition of host defense	Tuberculin test; chest x-ray	Antitubercular drugs; withdraw steroids	*Very good*
Histoplasmosis	Inhibition of host defense	Histoplasmin test; chest x-ray; serologic tests?	Withdraw steroids	Unknown
Viral infection	Inhibition of host defense; increased virulence	Withhold steroids if history negative	Withdraw steroids	Guarded (generally good)
Bacterial infection	Inhibition of host defense; increased virulence (shock)	Early recognition of infection; stained smear; early use of antibiotics	Increase steroid dosage; increase and widen antibiotic coverage; hospitalize	Good
Gastrointestinal ulcers *and complications*	Anti-inflammatory; increased acidity; increased pepsinogen	X-ray subjects in advance; antacids; *dietary measures*	Reduce dosage or eliminate steroids; measures appropriate to complications	Good
Periarteritis	Unknown	Unknown	Probably withdraw steroids	Guarded

tion. Until histoplasmosis is better understood, however, it would seem wise to be careful about the use of the drugs in individuals with lesions suggestive of this fungous infection and with positive histoplasmin skin tests. Certainly, frequent x-rays are necessary, and it may be desirable to perform some of the newer serologic tests as guides to the presence of active disease. When the disease occurs and seems to be activated, then we should think it highly desirable that steroid therapy be discontinued.

Viral Infections: The problem of viral infections complicating steroid therapy is a much more serious one, since there are no effective virucidal agents comparable to the antitubercular or antibacterial agents. The field is a complicated and changing one as new experiences develop, but it would seem particularly that viruses with dermotropic properties as well as the capacity to invade other tissues are especially to be feared during steroid therapy. Severe and fatal complications of vaccinia in an adult, increased invasiveness of herpes simplex virus, and especially marked increase of the invasiveness and virulence of varicella have been described.[31] The latter is particularly frightening, and it is our practice to withhold steroids from children who have not yet had chickenpox. Families of children under treatment with the steroids are also instructed as to the hazards of a chickenpox infection and requested to inform us at once should the child be exposed. It is the better part of wisdom to withdraw the steroids under such circumstances and to substitute other agents, even though less effective, in the management of the primary condition. Should the disease occur during steroid therapy, a child should be kept under the closest possible observation and the dosage of steroids reduced, although not too abruptly.

Bacterial Infection: The most common and potentially most dangerous complication of steroid therapy is bacterial infection. Prolonged therapy with the steroids both weakens host defenses and increases the virulence of the invading pathogenic organism, while at the same time masking the constitutional and clinical effects of the developing infectious process. This may occur in individuals who did not initially have infection together with their allergic inflammation; it is therefore necessary that patients be kept under the closest possible observation during the institution of steroid therapy and while on maintenance doses as well. Numerous clinical experiences have attested to the gravity of infections once they develop in the steroid-treated individual and the rapidity with which, especially in older patients, shock may supervene and resist all forms of supportive therapy, even though the patient be hospitalized at once.

Under ordinary circumstances, the greatest number of patients suffering from allergic diseases who are treated with steroids will be sufferers from intractable rhinitis and asthma, each of which persists for long periods of time during the year, perhaps even throughout the year. Many of these patients have superimposed bacterial infection for a great part of the duration of their major symptomatic difficulty. The bacterial infection itself contributes considerably to the symptoms from which such patients suffer, although the underlying allergic inflammatory response predisposed to the development of the superimposed infection. Steroid therapy is extremely helpful in these situations but must be very carefully timed, and evidence of infection must be sought for by the simple device of examining the stained smear of the secretions obtained from such patients.

The eosinophilic leukocyte is the hallmark of the allergic response, just as the neutrophilic leukocyte and the presence of bacteria are the hallmarks of infection. Nasal secretions from the sufferer from rhinitis and sputum from the sufferer from asthma (except in the case of children) are readily available for a simple staining procedure. The reagents used are 5% eosin Y and 0.1% methylene blue in methyl alcohol. The method is as follows: (1) immerse the slide in eosin for one minute, (2) flood with distilled water for three minutes, (3) drain and wash with distilled water, (4) flood with 95% ethyl alcohol, (5) drain, (6) immerse in methylene blue for one minute, and (7) wash with distilled water. This staining procedure should be carried out in all individuals who are to be placed on steroid therapy, and it serves as an extremely useful diagnostic procedure and therapeutic guide.

Since secretions to be examined are frequently quite viscid and contain clumps or opaque particles of cellular exudate, it is highly desirable in making a careful spread of the material on a slide to examine a number of areas on the slide after the staining procedure has been carried out. In the grossly infected subject, there is no difficulty in encountering numerous neutrophilic leukocytes and many bacteria scattered throughout practically every area of the slide. Lesser degrees of infection will demonstrate fewer neutrophils and bacteria, and these may be absent from some sections of the slide. This is equally true of the eosinophil. The presence of a single eosinophil in every high-power field or in every other high-power field is an index of the presence of an underlying allergic inflammatory response. Purely infectious responses in nonallergic individuals almost never reveal eosinophilic leukocytes on the stained smear, and for this reason the simple eosinophilic stain is an excellent means of making a presumptive diagnosis and also serves as a guide to the presence of infection superimposed upon allergic inflammation. Examination of the smear is, of course, supplemented by careful examination of the visualizable epithelial surfaces, but in our experience the color of the nasal mucous membranes, for example, is not always a reliable guide to ascertaining whether one is dealing with an inflammatory process due to infection, allergy, or both.

If infection is dominant, it is our practice first to use antimicrobial therapy together with oral vasoconstrictors or bronchodilators, depending upon which area is symptomatically involved, and to have the patient return within several days for reexamination. Evidence will shortly be found both symptomatically and by examination of the secretions that infection is coming under control, and it is at this point that steroid therapy may be introduced, while the antimicrobial agents are continued for as long as the clinical and microscopic evidence suggests is necessary. A number of patients so treated have been carried through periods of purulent sinusitis complicating either rhinitis or bronchial asthma or both and have done extremely well under such treatment. There is no suggestion from the observations in the present series that the administration of the steroids has been responsible for the development of purulent infections complicating the allergic state. It has been our distinct impression that those patients who are prone to develop infections superimposed upon the allergic inflammation are less likely to do so when their conditions are adequately controlled with steroids and that individual patients who had been subject to frequent bouts of severe infection of the upper respiratory tract and sinuses have generally done better during the seasons of treatment with the steroids.

Should the individual, despite all measures taken to avoid this, develop a major bacterial complication such as bacterial pneumonia during the course of treatment with the steroids, then it is desirable to detect such infection quickly and to place the patient under hospital care at once. Steroid dosage may have to be increased rather than therapy withdrawn, especially if there be any evidence that the blood pressure is falling. There should be increased and widened antibiotic coverage, particularly including bactericidal antimicrobial agents in addition to the bacteriostatic ones. The problem is especially great at both extremes of age and demands close supervision of the patient.

Perforation or Hemorrhage of Gastrointestinal Ulcers: One of the most distressing anti-inflammatory effects of the steroid drugs is that which may result in perforation or hemorrhage of preexisting ulcers of the gastrointestinal tract.[6] Peptic ulcer is not infrequently associated with bronchial asthma, and the combination poses a special problem. Steroids should be withheld from such patients wherever possible. Where the need for control of asthma or other allergic manifestations becomes urgent, however, such patients should have gastrointestinal x-ray examination and may be treated with steroids if the ulcer is inactive. An ulcer dietary regimen, antacids, and antispasmodics should be administered during sterotherapy, which should be intermittent and interrupted as soon as possible. It may sometimes be helpful to restore the bronchial tree to a state of greater responsiveness to nonsteroid drugs by administering a short course of the steroids, even to patients known to suffer from peptic ulcer, provided there is no evidence of an active ulcer niche or penetration at the time therapy is initiated. Occasionally the problem arises as to the administration of steroids to ulcer patients with asthma who have undergone subtotal gastrectomy at some time in the past. It would be well to obtain information concerning the concentration of the gastric acid secreted by the residual stomach in such individuals, but they can be treated rather easily with intermittent doses of steroids at times of peak bronchial distress, particularly if their problem is seasonal rather than perennial. One such patient under treatment for two seasons of asthma has had no difficulty whatsoever, though the steroid treatment was supplemented with adequate doses of antacids distributed throughout the day.

Periarteritis: The problem of periarteritis developing in patients under prolonged treatment with the steroids is an interesting one about which evidence is not yet sufficient and is being accumulated. A recent communication from the Mayo Clinic[3m] gives the most important evidence concerning this phenomenon in the management of the arthritic patient. Autopsy of arthritic patients revealed an appreciable incidence of generalized periarteritis in those patients with rheumatoid arthritis who had been under treatment with steroids, as contrasted with its total absence in those who had not received steroids. The phenomenon has also been encountered by the investigators at the National Institutes of Health and seems unquestionably to be associated with prolonged therapy with steroids. There are certain experimental analogues of the phenomenon, and there are some who believe that masked bacterial invasions occurring during the course of steroid therapy may be responsible for the development of hypersensitivity, resulting in lesions of this type. There is much to be done yet to evaluate and understand the pathogenisis of the phenomenon, but there seems little doubt that it may occur. A related phenomenon is that which was described earlier by Slocumb[3d] as a "panmesenchymal and panangiitic" reaction during withdrawal of hormone therapy.

In his most recent communication,[3m] Slocumb has stated that he has seen this phenomenon so far only in patients with rheumatoid arthritis (and possibly some with disseminated lupus erythematosus), who responded to chronic hypercortisonism by the appearance of the reaction, but we have encountered it in two asthmatic subjects on maintenance therapy without evidences of hypercortisonism. Both patients developed arthralgias and aching in the major muscle groups of the extremities during the phase of withdrawal and, in each instance, responded promptly to the temporary increase of the steroid dosage. The reaction also developed in a patient suffering from keratoconjunctivitis sicca (Sjogren's disease); this patient had, however, experienced occasional mild arthralgias prior to sterotherapy. This female, who had been under treatment with steroids over a period of several weeks in an unsuccessful effort to control the keratoconjunctivitis sicca, developed a flare-up of the arthritic manifestations at the time of withdrawal of the drug. This flare-up responded to reintroduction of the steroid therapy and failed to reappear when therapy was tapered off far more slowly. The type of lesion described in the four subjects of the Mayo Clinic series seems to be one which should respond to larger doses of steroids, but we are still inclined to withdraw the drugs as promptly as possible, since we now know so little about the ultimate significance of this curious phenomenon.

Before leaving the subject of the complications of prolonged steroid therapy, we would like to speculate regarding the incidence of complications. It is possible that certain steroid-treated patients are more prone to develop one or another of the major complications outlined above. Some of the complications, such as the development of severe bacterial infection and the manifestations of hormone excess, are likely to develop in any steroid-treated subject. It has seemed to us, however, that the arthritic individual is more prone to develop the angiitis or periarteritis and complications of gastrointestinal ulceration, while the asthmatic is more prone to develop osteoporosis and, of course, infections, since such an individual is more commonly infected before therapy is instituted. It remains for future careful statistical evaluation to establish whether such a "disease-proneness" in fact exists.

Present Clinical Study

Not all of the clinical and laboratory principles elucidated above were practiced throughout the course of the present clinical study, which extended for somewhat longer than two years. Actually, the principles outlined were evolved throughout the period and are all in operation at the present time. A fundamental principle is that all patients on steroid therapy should be under close clinical and laboratory surveillance, especially those whose therapy may extend for more than one month. This is becoming more than theoretically difficult to accomplish, because patients are obtaining supplies of the steroids without medical supervision. This is certainly to be condemned, but it has happened to several patients under our own observation who were successfully and comfortably treated during the first year of observation and who in the second year availed themselves of supplies of the steroids and took them according to the same program which had been successful in the previous year. In at least one such instance, the patient developed rather marked central nervous system symptoms and sought medical advice on that account.

As indicated in table 3, a variety of clinical conditions were treated with steroids. Among the 39 children, 14 suffered from strictly seasonal illness, 16 from perennial symptoms, 7 from atopic dermatitis, one from contact dermatitis, and one from systemic lupus erythematosus. It should be noted that some of the children classified as suffering from either perennial rhinitis or asthma actually presented very markedly positive skin reactions and were really suffering from inhalant allergy complicated by an infectious process which extended the symptoms throughout the year. The adult population of patients had a somewhat similar range of distribution, 47 suffering from seasonal illness, 34 from perennial symptoms, and 9 from atopic dermatitis; the remaining 23 cases were distributed among contact dermatitis, urticaria due to penicillin, chronic urticaria of uncertain etiology, arthritis, keratoconjunctivitis sicca, and psoriasis complicated by acute eczema.

The youngest child treated was 2½ years old, and 15 of the first 35 children were under the age of 8, while 20 were older. The adults treated were equally divided as to sex, with 57 males and 56 females; however, of interest is the fact there were more females in the very youngest adult population and none in the age group over 60. This series, however, is too small for any great significance to be attached to this observation. There was an almost equal distribution of males and females between the ages of 20 and 60.

Table 3.—*Data on Patients with Allergic Conditions Treated with Steroids*

		Children, No.	Adults, No.
Seasonal	Rhinitis	8	29
	Asthma	1	0
	Both	5	18
Perennial	Rhinitis	1	6
	Asthma	7	16
	Both	8	12
Atopic dermatitis		7	9
Other hypersensitive states or emphysema		2	23
Total		39	113

Table 4 reveals that some 51 courses of therapy were administered to the 39 allergic children while 143 courses of therapy were administered to the 113 allergic adults. This simply indicates that attempts to discontinue therapy were made frequently throughout the course of treatment, whenever clinical circumstances seemed to warrant it; the repeat courses in most instances reflect an incomplete resolution of the original allergic process, although a few were instances of a second year of treatment to the same individual. It should be noted also from these tables that 27 of the 51 courses in children were given with antibiotic coverage and that 23 of these were for patients with perennial allergies. The adults had a somewhat lower incidence of antibiotic coverage in association with therapy, but this results partly from the fact that in the adults a higher percentage of the total courses of treatment were given to those with seasonal allergy. Thus, 60 of 143 courses in adults were for seasonal allergy, as compared with 15 of 51 courses for seasonal allergy in children. In the adults, 35 of the 51 courses given with antibiotics were for perennial symptoms.

Table 5 shows the duration of therapy for the two classes of patients. Among the children, excluding the one patient with systemic lupus erythematosus, who was treated for more than four years and is still under treatment, 23 of 50 courses were administered for one month or less and 21 for a period of two to five months, and only 6 were given for more than six months. In the adults, only 18 of the 143 courses were administered for longer than six months; 85 of the 143 courses were given for one month or less and an additional 29 for two to five months.

Table 4.—*Allergic Condition Treated With Steroids, With or Without Antibiotic Coverage, in 39 Children and 113 Adults*

	Course No.					
	In Children			In Adults		
Condition	With Anti-biotics	Without Anti-biotics	Total	With Anti-biotics	Without Anti-biotics	Total
Seasonal	3	12	15	8	52	60
Perennial	23	5	28	35	15	50
Dermatitis	1	6	7	1†	18‡	19
Miscellaneous	...	1*	1	7	7	14
Total	27	24	51	51	92	143

* Systemic lupus erythematosus.

† Atopic dermatitis.

‡ Five courses in patients with atopic dermatitis, 13 in those with other types.

A variety of initial dosage schedules was employed, but, in the main, the effort was to obtain an initially high level of steroid and to reduce the maintenance dose to a minimal effective level as quickly as this could be accomplished. With children under 40 lb. (18.1 kg.), the initial dose was frequently 5 to 10 mg. repeated twice at six-hour intervals followed by a day or two of 5 mg. every six hours with reduction by 5 mg. per day as the clinical circumstances permitted. The daily maintenance dosage for the majority of the children was between 5 and 10 mg.

The usual initial dosage with adults was 15 mg. repeated at six-hour intervals until appreciable relief had been obtained, usually for two or three additional doses. This was followed by 10 mg. every six hours on the second day of treatment and by a reduction to 5 mg. every six hours on the third day, this dosage being maintained for several additional days. The patients were usually seen at weekly intervals and the dosage modified by reducing by 5 mg. per day at half-weekly intervals, since the patients maintained telephone contact during the interval between visits. The great majority of the patients were maintained on 5 to 15 mg. per day, and only rarely were we able to get below this level, while 15 (10% of the total) required maintenance levels of 20 mg. or more.

Side-effects.—Side-effects were notable by their absence in the entire series. The most common finding was a mild acneiform eruption, generally of the face, and not sufficiently disturbing even to the female population to justify discontinuing therapy. In fact, there were no complications which necessitated discontinuance of drug therapy. Moon facies were only occasionally encountered, five times in the children and six times in the adults. Edema was never encountered as a complication of therapy, nor was weight gain ever a problem. With the exception of the patient mentioned above, no subject developed glycosuria or other signs of diabetes. One young adult, aged 20, developed rather prominent striae over the gluteus muscles bilaterally. and these remained for several months following the discontinuance of therapy but ultimatel disappeared. None of the patients developed hypertension, and only a few complained of gastrc intestinal symptoms sufficiently severe to require c indicate that gastrointestinal x-ray examinations b performed. In the six patients subjected to gastr intestinal x-ray studies, no lesions were demonstrated. Three of the children developed a voraciou appetite, and this persisted throughout the period (therapy, even while the maintenance dose w being employed. All of these reverted as soon : therapy was discontinued. One child, who had cer bral palsy and severe asthma, became rather moi belligerent than usual. It is possible that this w also due to the drug; however, it was not a di turbing feature and did not require that the drug l withdrawn, although it did hasten somewhat tl reduction in dosage. Among the adults there we four individuals who complained of irritability or j teriness and inability to concentrate, but these we all less disturbing than an associated insomnia, whi also occurred occasionally among the children.

Table 5.—*Duration of Steroid Therapy in 39 Children a 113 Adults Treated for Allergic Conditions*

	Seasonal			Perennial				
Duration, Mo.	Rhi-nitis	Asth-ma	Total	Rhi-nitis	Asth-ma	Total	Der-ma-titis	Tot
			Children*					
1	8	3	11	1	9	10	2	[illegible]
2-5	1	2	3	1	13	14	4	[illegible]
6 or more	1	...	1	...	4	4	1	[illegible]
			Adults†					
1	28	22	50	3	19	22	13	[illegible]
2-5	6	3	9	2	13	15	5	[illegible]
6 or more	...	1	1	3	10	13	1	[illegible]

* In addition, one child with systemic lupus erythematosus treated for four years.

† In addition, 14 adults were treated for miscellaneous conditio 3 of them for more than 6 months.

In all, side-effects of therapy were no problen but of course it should be emphasized that a gre majority of the patients were treated for less tha five months. However, the reaction rate was n overwhelmingly high among those who were treate for longer than six months. In fact, these were th individuals to whom considerably more attentio was paid, and the reaction rate among this pe centage of the total series was even less than amon the others.

Comment

The present series of patients was an average population of ambulant patients seeking diagnosis and management of allergic disorders. The two-year study would suggest that prednisone and prednisolone may be safely administered to both children and adults if the mechanism of the complications which may ensue is carefully kept in mind to serve as a guide to the management of the patient. The clinical response to therapy was usually dramatic, and virtually all allergic manifestations invariably responded to treatment with adequate dosage, with 85 to 100% relief. The failure to respond to adequate dosage of the steroids should lead to the suspicion that an incorrect diagnosis had been made. The drugs were never employed as the only method of management of a given patient but were usually given for very special reasons, such as restoration of earning capacity of a family breadwinner or the relief of intractable symptoms which had been present for weeks or months and which had failed to respond to other methods of management. Appropriate diagnostic measures to understand and evaluate the etiological role of inhalant and other allergens were always carried out, and skin testing procedures were conducted during steroid therapy, since it has been established that the latter drugs do not interfere with the usual wheal and erythema responses to skin testing. There seemed to be no difference in the clinical effectiveness of prednisone and prednisolone, nor did there seem to be any difference in the development of complications with either of the two drugs, since occasionally one would be substituted for the other in the effort to see whether moon facies, acne, some modification of appetite, or insomnia might be favorably effected. This was usually not accomplished.

Nevertheless, complications of steroid therapy do occur, and we are in agreement with Kern[3k] when he calls attention to all physicians to be guided in the use of steroids by the ethical principle *primum non nocere*. As Dr. Kern says, "what was enjoined in the Hippocratic oath is binding today upon the physician; that he shall not knowingly do his patient any harm." No rational physician would knowingly do his patient any harm, and it is our much greater obligation to become knowing and thereby avoid doing our patients harm. Many therapeutic agents may be harmful in improper dosage, and, in fact, we have always been deeply concerned about "margins of safety" as part of the pharmacological description of any therapeutic agent. The steroids provide us with a more complex hazard than is encountered with many other therapeutic agents. It is our obligation to learn enough about them to deal with them safely and to extend their use to the ultimate well-being of our patients rather than to refrain from using them when the indications are present. Salassa and associates[3a] have stated the case very nicely in discussing the avoidance of postoperative adrenal insufficiency among patients previously treated with cortisone:

> In order to protect all patients from the risk of postoperative adrenal insufficiency, the present inadequate state of knowledge may require administration of unnecessary prophylactic treatment to many patients. This appears to be justifiable in order to protect the few, since there appears to be little reason to fear that the measures proposed will be injurious, even though they are unnecessary. Until we have more information than at present, it is preferable to treat some patients who do not require these measures rather than to withhold treatment and careful observation from those who do.

Similar principles may be a useful guide to the avoidance of all of the complications associated with steroid therapy. Until we are better equipped to select the complication-prone individual, it will be wisest to exercise degrees of precaution unnecessary (but not injurious) to most in order to protect the susceptible few. Such a principle, dominated by the closest possible supervision of the steroid-treated patient, should permit a safely widened use of these very valuable therapeutic agents.

Summary

The most important principle underlying safe therapy with the steroids is familiarity with the major complications of steroid therapy and their mechanism, prevention, and management. With these complications kept in mind, 51 courses of steroid therapy were administered to 39 allergic children and 143 courses to 113 adults for period ranging from one to more than six months. Steroid therapy was extremely effective in all of the allergic diseases studied, and complications were exceedingly few. It is believed that the steroid drugs may be safely used even in long-term management provided (1) patients are kept under close surveillance and (2) the mechanisms of the complications are constantly kept in mind, with appropriate clinical and laboratory observations performed to detect them at the earliest possible moment.

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The prednisone and prednisolone used in this study were supplied as Meticorten and Meticortelone by Dr. George Babcock Jr., associate director, Division of Clinical Research of the Schering Corporation, Bloomfield, N. J.

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6. Footnote 3*c*, *e*, *i*, and *k*.

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CAROTID ARTERY OCCLUSION AND ITS DIAGNOSIS BY OPHTHALMODYNAMOMETRY

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Headaches, seizures, monocular blindnes pareses, and unconsciousness, receding and recurring, and finally progressing to hemiplegic should lead to the suspicion of stenosis or occlusion of a carotid artery. Valuable diagnosti information in such cases is obtained b arteriography and by applying digital pressure to the unaffected carotid, but both procedures have inherent dangers. A safer procedure, here described, consists in observin the central artery of the retina by ophthalmoscopy while measured pressures are applied t the eyeball. As the pressure is increased, pulsations usually appear in the artery between 2 and 70 Gm. of pressure and usually cease between 60 and 130 Gm. Data are given on five cases of proved occlusion of the internal carotid, and two case histories illustrate typical findings. The test is neither painful nor dangerous. Its use should be encouraged, for an early diagnosis greatly improves the outlook for successful surgery.

Carotid artery occlusion has been the subject of increasing attention because it causes a variety of cerebral vascular symptomatology that is amenable to specific medical and surgical therapy. It is the purpose of this paper to draw attention to certain features of the disease and to a simple and reliable method for bedside diagnosis.

Prior to 1937, spontaneous occlusions of the common or internal carotid arteries were reported infrequently, and the diagnosis was seldom made during the patient's life. Even at autopsy, the carotid vessels in the neck were rarely examined, and the brain merely showed the signs of cerebral softening, the underlying cause of which remained obscure. In those cases that were reported, the association of homolateral blindness with contralateral hemiplegia was noted, and this was accepted as the syndrome of carotid occlusion.

With the advent of carotid arteriography, however, unexpected instances of occlusion of these vessels came to be recognized,[1] and primary involvement of the carotid arteries in the neck became familiar as the cause of a certain proportion of cerebral vascular accidents.[2] Furthermore, carotid occlusion was found on occasion when intracranial tumor or demyelinating disease was suspected. As arteriographic experience throughout the world accumulated, it became evident that occlusion of one or more members of the carotid complex occurred much more frequently than hitherto been appreciated. Fisher[3] examined the rotid vessels in the neck in a series of 432 unsele patients undergoing autopsy and found complete oc

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of one or more vessels in 6.5% of them, with severe owing in an additional 3%, thus bringing to 9.5% number harboring significant occlusive disease of cervical carotid system.

ıe internal carotid artery is involved alone much e frequently than is the common carotid artery)2.5% in the series of Johnson and Walker [2]), and most common site of occlusion is the carotid sinus, at or beyond the bifurcation of the common carot- rtery (fig. 1). The carotid sinus is a site prone to development of atherosclerosis (present in 91% of le's series of unselected autopsies [4]), and athero- otic narrowing, with or without superimposed mbus formation, is the usual cause of occlusion.

Clinical Picture

addition to their pathological studies, Fisher [3] Johnson and Walker [2] examined the clinical pic- intensively in order to delineate a pattern of ptoms and signs or of onset that would lend itself to cal recognition or suspicion. Unfortunately, visual ırbances are altogether absent in the majority ases, while transient or permanent monocular dness on the side of the occlusion, once thought acteristic, is present in only 15 to 25%. The hemi- sis or hemiplegia, aphasia, cortical sensory dis- ances, visual field defects, and mental symptoms rved are in no way distinguishable from the same ings in cases of cerebral vascular accidents of a ly intracranial origin.

n the other hand, Fisher [3] drew attention to the that hemiplegia, present sooner or later in 80% ases, is often preceded by premonitory transient iparesis, monoparesis, aphasia or dysphasia, pares- ias, alterations in consciousness, monocular blind- , focal or general seizures, and headaches and that tendency for these transient symptoms to recur recede, often in a pattern peculiar to the individ- patient, should lead to the suspicion of carotid lvement. It is assumed but not proved that the od of premonitory symptoms and signs corresponds stenosis of the artery, while the subsequent iplegia follows complete occlusion. It has been ly demonstrated that the intermittent symptoms n reflect diminution in the systemic blood pressure n whatever cause,[5] and Eastcott and co-workers [6] orted a patient with proved sclerotic narrowing of internal carotid artery who developed transient iplegia and aphasia during recurrent bouts of oxysmal auricular tachycardia. After resection of diseased segment, the attacks no longer were asso- ed with neurological symptoms.

Vhile the mode of onset of the syndrome may be sidered typical if it is characterized by recurrent sient symptoms, arteriography has revealed many es of carotid occlusion that have manifested them- ves abruptly, or apoplectically, recalling the more nmon type of cerebral vascular accident, while still ers show a progressive neurological deficit, in some es suggesting brain tumor. It is apparent, then, that clinical picture cannot be relied upon for diagnosis carotid occlusion, although the character of onset and especially the presence of transient or permanent monocular blindness on the side of the occlusion may suggest it.

Although a detailed review of the clinical features of carotid occlusion is not within the scope of this paper, we have included the foregoing remarks to emphasize that primary carotid disease should be considered in the differential diagnosis of all cerebral vascular symptomatology but that confirmation must depend upon special examination. The purpose of this paper is to draw attention to a simple and reliable diagnostic method.

Description and Use of Ophthalmodynamometer

Ophthalmodynamometry is a means for measuring the pressure in the central artery of the retina. Its significance for our purpose lies in the fact that the central artery of the retina is a branch of the ophthalmic artery, which, in turn, is the first sizable branch of the internal carotid artery (fig. 2). Diminution in pressure in the carotid artery due to occlusion or stenosis at any point proximal to the origin of the ophthalmic artery must of necessity be transmitted via the ophthalmic to the central artery of the retina, and this is the basis for the transient, occasionally permanent, monocular blindness noted in carotid occlusion. The infrequency with which blindness does occur is due to the rich collateral circulation between branches of the ophthalmic and external carotid arteries, although the pressure in the central retinal artery remains low.

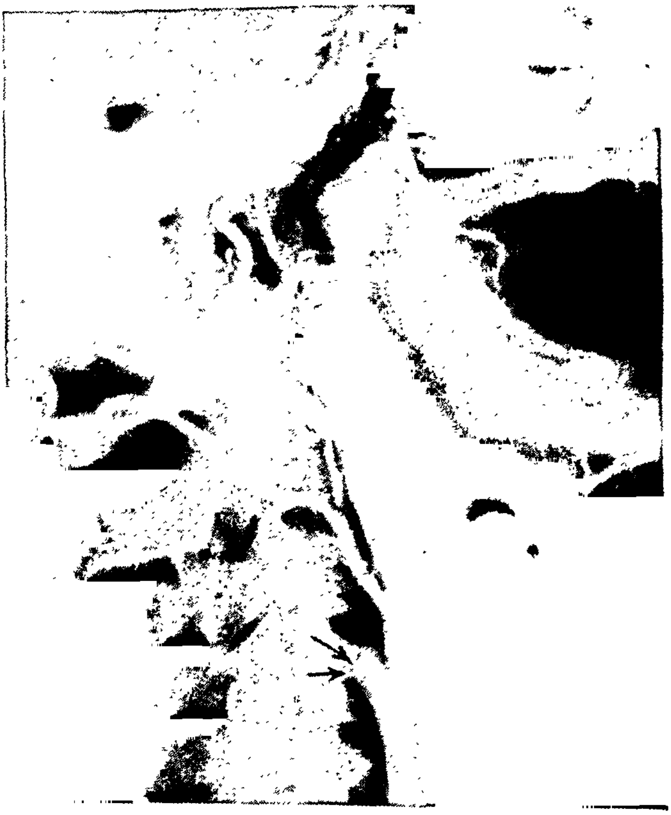

Fig. 1.—Typical arteriographic appearance of occlusion of internal carotid artery at carotid sinus. A short stump of the vessel is visible.

Case 1.—A 57-year-old miner had a sudden onset of generalized head and face pain five days before hospital admission, with two episodes of transient blindness. He collapsed a few hours later but did not lose consciousness. Partial aphasia was noted. Two days later there was an onset of hemiparesis on the right, which progressed to hemiplegia and complete expressive aphasia. The loss of sweating on the left side of the face was noted by the family.

Bilaterally the blood pressure was 130/80 mm. Hg. The carotid pulse was perhaps slightly weaker high on the left side of the neck but was present. There was a strong pulse present in the right tonsillar fossa, none in the left. The patient was conscious and able to carry out simple commands, but there was complete expressive aphasia. There was weakness of central type on the right side of the face and hemiplegia. Extensor plantar reflex on the right was present. There was hemihypesthesia on the right and diminished corneal reflex. Horner's syndrome was present on the left. The retinal arterial pressure in the right eye was 110/90 and in the left eye 60/40. A percutaneous arteriogram on the left revealed occlusion of the left internal carotid artery 2 cm. beyond the bifurcation of the common carotid, with filling of the carotid siphon via the ophthalmic artery (fig. 4A). At operation the obstructing atheroma and thrombus were removed and retrograde flow obtained. The postoperative retinal artery pressures were similar in both eyes, thus indicating successful reestablishment of internal carotid circulation, which was confirmed by arteriography (fig. 4B).

Retinal Artery Pressures and Other Data on Five Cases of Proved Internal Carotid Occlusion

Case No.	Age, Yr.	Sex	Point of Occlusion	Principal Symptoms	Time of Observation	Retinal Artery Pr	
						Patent Side	Occlud
1	57	M	2 cm. beyond common carotid bifurcation	Hemiplegia on right and expressive aphasia	Preoperative	110/90	60/40
					3rd postoperative day	130/80	[illegible]
					8th postoperative day	80/70	[illegible]
2	56	M	Carotid sinus	Hemiparesis on right and partial expressive aphasia; bruit over carotid	Preoperative	90/40	25/5
					Preoperative	100/70	[illegible]
					1st postoperative day	120/75	[illegible]
					3rd postoperative day	100/70	[illegible]
					15th postoperative day	90/60	[illegible]
					28th postoperative day	90/45	[illegible]
3	53	M	1 cm. beyond common carotid bifurcation	Variable hemiparesis on left	Preoperative	95/40	[illegible]
					7 weeks postoperative (flow not reestablished at operation)	90/45	[illegible]
4	45	M	Carotid sinus	Progressive hemiplegia on left	Preoperative	140/75	[illegible]
5	39	M	Carotid sinus	Monoparesis	Preoperative	145/85	[illegible]
					2½ yr. after occlusion	105/60	[illegible]

Case 2.—A 56-year-old right-handed man had repeated attacks of temporary blindness of the left eye for eight weeks, with intermittent headaches and dizziness, speech difficulty, and facial weakness on the right. He had temporary weakness and paresthesias of the left arm and leg six weeks before hospital admission. Four days before hospital admission there was sudden onset of severe and persistent hemiparesis on the right on awakening. There was no aphasia.

Bilaterally the blood pressure was 130/70 mm. Hg. The dorsalis pedis and posterior tibial pulses were absent bilaterally, and the femoral pulse was weak. The carotid pulsations in the neck were equal bilaterally.

A systolic bruit was heard over the left carotid, but none over the right. There was weakness of conjugate gaze to the right and lateral rectus weakness on the right. Weakness of peripheral type was present on the right side of the face. There was paralysis of the right upper and moderate weakness of the right lower extremity. Extensor plantar reflex was present on the right. The retinal artery pressure in the right eye was 90/40 and in the left 25/5. The history of bilateral weakness and presence of cranial nerve involvement suggested basilar as well as left carotid arterial insufficiency. Anticoagulants were given; there was rapid improvement in the right lateral gaze, less facial weakness, more power in the right leg, but no change in the arm or hand. A persistent bruit over the left carotid suggested stenosis rather than complete occlusion; arteriography demonstrated incomplete occlusion at the carotid sinus. C plete hemiplegia and aphasia ensued within the next few h then receded, but recurred the next day, and explora carried out. Obstructing atheroma and thrombus were r retrograde flow obtained, and the diseased arterial s bypassed. The retinal artery pressure the next day s marked improvement, and thereafter the pressures w laterally equal.

Comment

Ophthalmodynamometry is not the only method diagnosing carotid occlusion. If the internal ca alone is involved, as is usual, palpation of the ve externally in the neck is misleading, since the exter carotid pulse is indistinguishable from the inter but Dunning [13] has reported success with palpa through the lateral wall of the pharynx. Although t test was positive in our case 1 above, our ex with the method in other cases has led us not on it, as we have encountered both falsely and falsely negative results. We feel that artery pressure determination is a much more clusive examination and hardly more difficult to form.

Webster and co-workers [14] have stressed the d nostic usefulness of loss of consciousness on di compression of the unaffected carotid, which s off the remaining cerebral blood supply except that reaching the hemispheres via the vertebral-b lar system. While most patients recover from without mishap, there is a known association betw atherosclerosis and hyperactivity of the carotid s and between periods of hypotension and aggrava of cerebral vascular insufficiency. Serious and per nent cerebral vascular accidents are not unkn after carotid sinus stimulation,[15] and for this reaso cannot recommend such a procedure.

Arteriography, of course, has been the stand method of diagnosis, short of surgical exploration. as we learned from case 2 reported above and others have pointed out before, it can be hazard when the occlusion is not complete, and the marg safety for the hemisphere in question is slim. It is tirely possible that the amount of manipulation of vessel necessary to perform the procedure is en vor the deposition of further thrombus on the dy roughened intimal surface of a stenosed lumen.

rotid occlusion presents certain therapeutic as- s not common to other strokes, which make rapid- f diagnosis desirable. If the vessel is completely ded when the patient is first seen, medical ther- must be directed toward preventing extension of mbosis into the cerebral arteries and toward keep- he collateral circulatory channels in and about the e of Willis patent and functioning. If the diagnosis be made during the early period of intermittent toms, therapy must be aimed at preventing rimposed thrombosis and complete occlusion of ready stenosed vessel. Millikan and co-workers [16] rightly drawn attention to the importance of gnosis during this stage, which they term the "Syn- me of Intermittent Insufficiency of the Carotid rial System," and have reported the efficacy of coagulant therapy in arresting the recurrent at- s. We believe it is in this stage, when prompt diag- is must precede specific therapy and when arteriog- hy should be avoided if possible, that ophthalmo- amometry will prove most useful.

. 4.—*A*, preoperative arteriogram of patient in case 1. stump of the internal carotid and the carotid siphon, h has filled via collateral channels, are indicated by vs. *B*, postoperative arteriogram of patient, demonstrating ablishment of patency of internal carotid artery.

inally, the cervical portion of the carotid artery he most readily available to surgical exploration any vessel concerned with cerebral vascular acci- its. Recent advances in vascular surgery are already ng applied to occlusions of this vessel,[17] and all ilable evidence suggests that the degree of success l be directly proportional to the speed with which accurate diagnosis can be made. This is true to a much greater degree in the brain than in other regions of the body because of the brain's greater vulnerability to hypoxia. To be successful, either medical or surgical therapy may well have to be instituted within hours of the onset of symptoms. Ophthalmodynamometry offers a simple method for screening those patients with cerebral vascular symptoms for whom surgery may be considered, since it would be manifestly impractical and undesirable to perform emergency arteriography on all patients suffering cerebral vascular accidents.

Summary

Atherosclerotic stenosis or occlusion of the internal carotid artery in the neck causes neurological symptoms and signs which often cannot be distinguished clinically from those observed in other cerebral vascular accidents. It is important, however, to differentiate this variety of stroke promptly from other varieties, for specific therapy in the form of anticoagulant drugs or resection of the stenotic segment should be instituted without delay. Among the diagnostic methods used, palpation of the carotid through the lateral wall of the pharynx, digital compression of the unaffected carotid, and arteriography all suffer from various drawbacks, the first being unreliable in our hands and the *others potentially hazardous. Measurement of the* pressure in the central artery of the retina by ophthalmodynamometry is a safe and practical bedside procedure, and a significantly lower pressure in one eye is a reliable indication of occlusion of the carotid artery on the same side. In five cases of carotid occlusion proved by surgical exploration or arteriography, ophthalmodynamometry was a useful diagnostic adjunct, accurately reflecting the occlusion in all five and the restored patency postoperatively in two.

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The surgical procedures in the cases reported were performed by Dr. Brooke Roberts.

The Bailliart ophthalmodynamometer was obtained from L. Giroux & Cie, Paris.

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the patient was still satisfied, the result is classified as fair. If the patient was dissatisfied or was seriously disabled in any way, the result is classified as poor.

It should be noted that the presence or absence of free hydrochloric acid is not a factor in this classification except that a proved or probable gastrojejunal ulcer automatically makes the result "poor." Gastric secretory studies were performed after the method of Farmer, Howe, Porell, and Smithwick.[3] Gastric secretions were collected under basal conditions for one hour, after peptone-beef broth stimulation for one hour, and after stimulation with intravenously administered insulin for two separate one-hour periods. The lower of the two pH values after the administration of insulin is reported. Free hydrochloridc acid was determined by electrometric titration to a pH of 3.5 and is expressed as total milliequivalents produced per hour. A few patients who did not receive insulin for gastric secretory studies because of age or medical contraindications were excluded from this study.

Table 3.—*Sequelae and Degree of Disability One Year After Subtotal Gastrectomy or Hemigastrectomy and Vagotomy for Duodenal Ulcer*

Factor	Operation*	Degree of Disability			
		None	Mild	Moderate	Severe
Weight loss	STG	21	9	10	5
	50% & V	15	19	11	0
Dumping syndrome	STG	34	4	2	5
	50% & V	35	7	2	1
Disturbed meal pattern	STG	18	15	11	1
	50% & V	26	16	3	0
Mechanical symptoms	STG	28	12	4	1
	50% & V	29	13	3	0
Decreased work capacity	STG	38	2	4	1
	50% & V	42	1	1	1
Diarrhea	STG	44	0	0	1
	50% & V	39	3	3	0

* STG = subtotal gastrectomy; 50% & V = hemigastrectomy and vagotomy. Forty-five patients in each group.

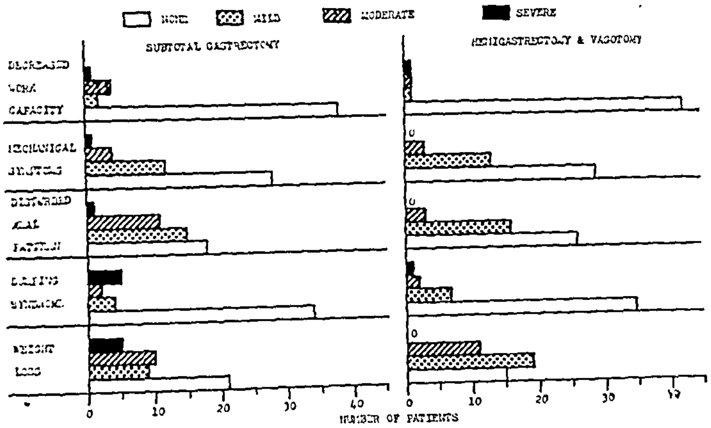

Fig. 1.—Sequelae and degree of disability one year after subtotal gastrectomy (45 patients) or hemigastrectomy and vagotomy (45 patients) for duodenal ulcer.

Results

The sequelae and degree of disability present one year after operation for duodenal ulcer are listed in table 3 and presented graphically in figure 1. Severe degrees of weight loss and dumping and moderate to severe disturbances of meal pattern were more frequent in the group of patients who underwent subtotal gastrectomy, while persistent mild to moderate diarrhea was more frequent in patients treated by hemigastrectomy and vagotomy. Since several patients had moderate to severe symptoms in several categories, and the series is small, these differences are probably not significant. Two patients in the subtotal gastrectomy group complained of recurrent ulcer symptoms at the time of examination. One of these patients gave a history of melena. In both patients the diagnosis of stoma ulcer was supported by x-ray evidence. One patient has had a transthoracic vagotomy. At the time of completion of this study we are not aware of the development of stoma ulceration in any patient treated by hemigastrectomy and vagotomy.

Table 4.—*Patient Reaction to Operation One Year After Subtotal Gastrectomy or Hemigastrectomy and Vagotomy for Duodenal Ulcer*

Reaction	Subtotal Gastrectomy Cases, No.	Hemigastrectomy and Vagotomy Cases, No.
Enthusiastic	34	29
Satisfied	9	16
Dissatisfied	2	0

Table 4 and figure 2 summarize the results of surgical treatment as evaluated by patients. These evaluations are subjective estimates of the degree of relief of ulcer symptoms afforded by operation after balancing such relief against whatever symptoms and difficulties were acquired as the result of surgery. This explains why some patients have been "enthusiastic" or "satisfied," although they may have a number of annoying or disabling sequelae and by more objective criteria be listed as "fair" or even "poor" results. The two patients dissatisfied with the results of subtotal gastrectomy were patients who developed stoma ulcers.

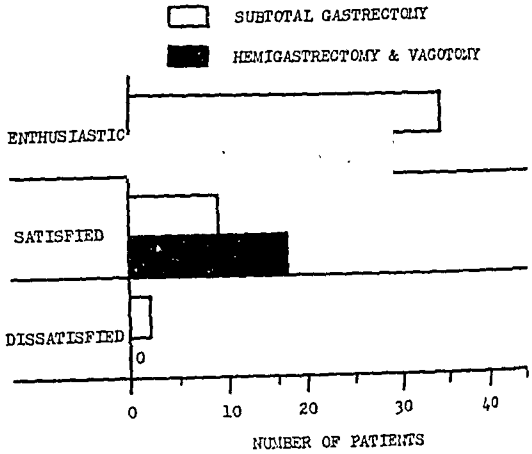

Fig. 2.—Reaction of patients to operation one year after subtotal gastrectomy (45 patients) or hemigastrectomy and vagotomy (45 patients) for duodenal ulcer.

The results of surgery one year after operation are shown in table 5 and figure 3. The results in the two groups of patients are very similar except that two of the three "poor" results in the subtotal gastrectomy group are so classified because of gastrojejunal ulcer

The results of pH determinations on the gastric ecretions of patients one year after operation are resented in table 6 and figure 4. As might be exected, insulin stimulation resulted in the greatest roduction of free hydrochloric acid. There is little diference between the two groups of patients with egard to basal and broth specimens. After insulin stimlation 40 patients (88.9%) in the hemigastrectomyagotomy group, as compared with 30 patients (66.7%) the subtotal gastrectomy group, remained achlorydric under all test conditions. Incomplete vagotomy the hemigastrectomy group did not result in any eater free acid production than occurred in patients ho continued to produce free acid after subtotal astrectomy.

ABLE 5.—*Results of Operation One Year After Subtotal Gastrectomy or Hemigastrectomy and Vagotomy for Duodenal Ulcer*

Result	Subtotal Gastrectomy Cases, No.	Hemigastrectomy and Vagotomy Cases, No.
cellent	12	12
od	24	27
lr	6	4
or	3	2

There did not appear to be any correlation between inical findings and the results of gastric secretory udies except for the fact that the two patients with istrojejunal ulcers produced free hydrochloric acid. one of these patients the pH of gastric secretion as less than 3.5 under all conditions of the study, hile in the other patient the pH fell below 3.5 only ter insulin stimulation.

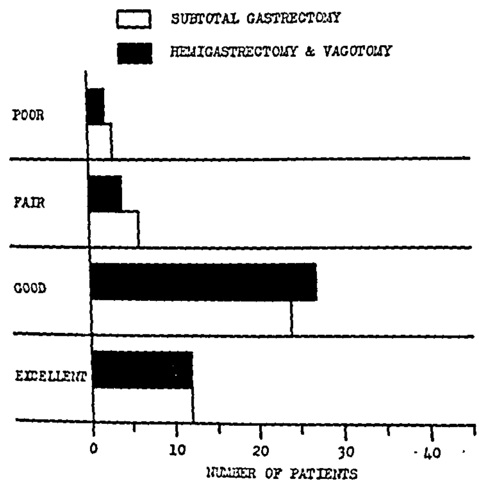

Fig. 3.—Results of operation one year after subtotal gastrecmy (45 patients) or hemigastrectomy and vagotomy (45 paents) for duodenal ulcer.

Comment

Our results in a group of 45 patients with duodenal lcer treated by hemigastrectomy combined with agotomy strikingly parallel those reported by Farmer nd Smithwick[2] who used the same criteria and nethods for clinical and laboratory evaluation. So far, hemigastrectomy with vagotomy for duodenal ulcer, as compared with subtotal gastrectomy, has afforded better clinical results and a decidedly greater frequency of achlorhydria. We consider this latter point to be of special significance, since it has been estimated that one in six patients with free hydrochloric acid persisting after gastrectomy for duodenal ulcer will develop a gastrojejunal ulcer.[1b] In our experience, with one possible exception, we have never encountered a patient with gastrojejunal ulceration who did not produce free acid under one or more conditions of the gastric secretory study we employ. To date, incomplete vagotomy (5 of 45 patients in the series reported) does not seem to influence the clinical result or to be associated with any greater degree of gastric acidity than found in patients who have free acid after subtotal gastrectomy.

TABLE 6.—*Gastric Secretory Studies One Year After Subtotal Gastrectomy or Hemigastrectomy and Vagotomy for Duodenal Ulcer*

Study	Operation*	pH Value	
		Under 3.5	3.5 and Over
Basal	STG	3	42
	50% & V	2	43
Broth	STG	4	41
	50% & V	1	44
Insulin	STG	15	30
	50% & V	5	40

* STG = subtotal gastrectomy; 50% & V = hemigastrectomy and vagotomy.

Judging from the reports of other investigators, it would seem that hemigastrectomy with vagotomy gives greater protection against recurrent ulceration than vagotomy with gastroenterostomy and fewer disabling sequelae than two-thirds to four-fifths gastric resection with vagotomy.[4] At this time we consider hemigastrectomy and vagotomy to be the procedure of choice for the elective surgical treatment of duodenal ulcer.

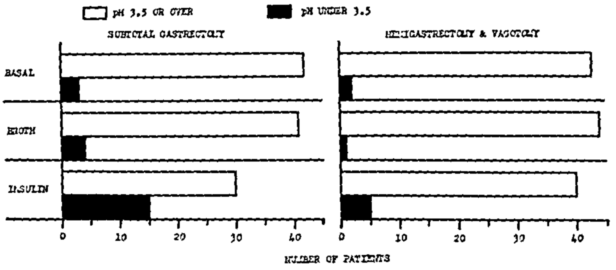

Fig. 4.—Results of pH determinations on gastric secretions one year after subtotal gastrectomy (45 patients) or hemigastrectomy and vagotomy (45 patients) for duodenal ulcer.

Summary

A group of duodenal ulcer patients treated by hemigastrectomy and vagotomy were compared with a similar group of patients treated by subtotal gastrectomy one year after operation. As measured by clinical evaluation and gastric secretory studies, the results of hemigastrectomy and vagotomy were found to be appreciably better than the results of subtotal gastrectomy. The superiority of the former procedure was particularly evidenced by a greater frequency of postoperative achlorhydria and the absence of recurrent ulcer disease.

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CLINICAL NOTES

HEPATOJUGULAROMETER

AN APPARATUS FOR QUANTITATIVE CONTROL OF PRESSURE AND FORCE APPLIED OVER THE HEPATIC AREA FOR THE HEPATOJUGULAR REFLUX TEST

George E. Burch, M.D., New Orleans

Recent efforts to study quantitatively the influence on systemic venous pressure of pressure applied manually over the hepatic region in normal man and in patients with chronic congestive heart failure revealed the need for a method to control such manual pressure quantitatively.[1] This need was particularly evident during comparisons of reactions to pressure over the hepatic area among different people and in the same person under varying circumstances or at different times. Furthermore, patients with severe or advanced congestive heart failure are often unable to withstand as much pressure as normal subjects or patients with other diseases. Thus, it would be desirable to know the amount of pressure and force that can be tolerated over the hepatic area. As a result of efforts to quantitate and control the amount of pressure and force applied over the hepatic area during the hepatojugular reflux test, the "hepatojugularometer" was designed.

The apparatus consists of a flexible rubber bag (basketball bladder), with an area of about 350 sq. cm., in contact with the hepatic area of the body. The rubber bag (fig. 1) is discoid in shape, with a wide diameter of 23.5 cm. and, when loosely inflated, a thickness of about 6.4 cm. The bag, which is inflated with air at a pressure of less than 1 mm. Hg, is connected by rubber tubing to an aneroid-type manometer calibrated in millimeters of mercury or to a mercury manometer such as the clinical sphygmomanometer (fig. 1). The apparatus can be made less cumbersome if a special small manometer is used as an inset in the rubber bag.

The hepatojugularometer is placed over the hepatic area, and pressure is then applied over the rubber bag with one or both hands. Venous pressure is recorded in the median basilic vein or any other vein before and during application of pressure to the hepatic area (fig. 1). Application of the same pressure over the hepatic area in all subjects would be desirable; at least, the amount of pressure applied should be recorded. In these studies, the

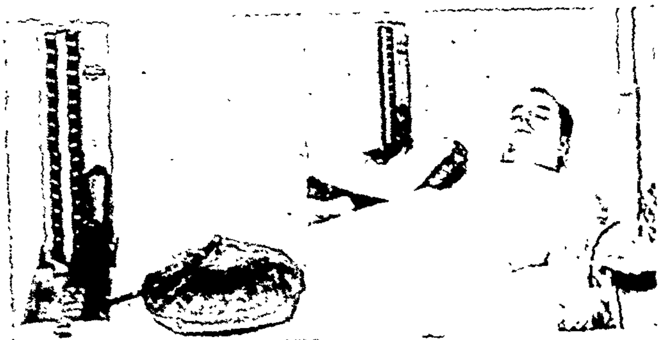

Fig. 1.—*Left,* photograph of hepatojugularometer. *Right,* hepatojugularometer in use.

From the Department of Medicine, Tulane University School of Medicine and the Charity Hospital of Louisiana.

orce of pressure applied by one or both hands pon the rubber bag was sufficient to raise the ressure within the hepatojugularometer to 40 or 0 mm. Hg (fig. 2A and B). The force (force=presure $\times$ area) thus applied is about 33 lb. or 15 $\times 10^6$ dynes for a pressure of 40 mm. Hg and about 43 lb. or 19 $\times 10^6$ dynes for a pressure of 50 mm. Hg, or roughly 1 lb. of force per mm. Hg applied (fig. 2A).

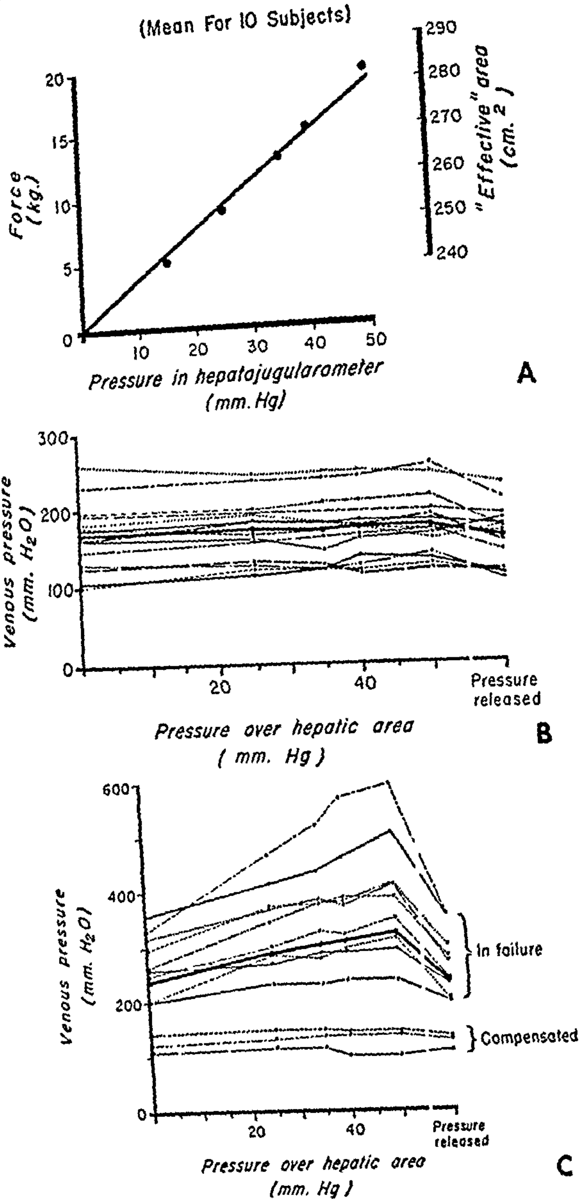

Fig. 2.—A, relation of force, pressure, and "effective" area ssociated with use of hepatojugularometer. B, influence of ressure over hepatic area on pressure over median basilic ein in 14 control subjects. Heavy line represents mean values. Note relatively little change in venous pressure with ronounced variations in pressure and force applied over epatic area by means of hepatojugularometer. C, influence of pressure over hepatic area on pressure over median basilic vein in 12 patients with chronic congestive heart failure, 3 of whom, represented by the lower three curves, were in cardiac compensation. Heavy line represents the mean for all 12 subjects. Note the striking elevation in venous pressure in subjects with uncompensated failure.

The size of the "effective" area was determined by placing the subject supine on a large rigid board, which lay across the platform of a clinical human balance, with the hepatojugularometer over the hepatic area; the pressure within the instrument was varied by manual pressure upon the bladder, as shown in figure 1. From the relation, force=pressure $\times$ area, the "effective" area was calculated, since force applied to the hepatic area was measured in pounds or kilograms by the balance and pressure in the hepatojugularometer was recorded by the mercury manometer.

By means of the hepatojugularometer, varying amounts of force were applied to the hepatic area for the hepatojugular reflux test in 14 patients without cardiac disease (control subjects) and in 12 patients with chronic congestive heart failure, 3 of whom were in cardiac compensation (fig. 2B and C). There is a tendency for a rise in venous pressure in the patients with failure to be related to the degree of pressure and force applied over the hepatic area with the hepatojugularometer.

The results illustrate the need for controlling and determining the degree of force applied to the hepatic area during study of the hepatojugular reflux. It appears that a pressure of 50 mm. Hg, or a force of about 42 lb., is sufficient to produce a rise in venous pressure in the presence of congestive heart failure, but less pressure may elicit such a response when, for clinical reasons, patients are unable to tolerate comfortably that amount of force.

Obviously, although the hepatojugularometer makes possible adequate control of the force applied to the hepatic area during the hepatojugular reflux test, it fails to evaluate the influence of muscle tone, Valsalva phenomenon, body build, and other factors. Nevertheless, this piece of apparatus is of assistance, since the aforementioned factors must be considered even when the bare hands alone are used.

1430 Tulane Ave. (12).

This study was aided by a grant from the Public Health Service and the Upjohn Company, Kalamazoo, Mich.

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PLASTIC TRACHEOSTOMY BUTTON

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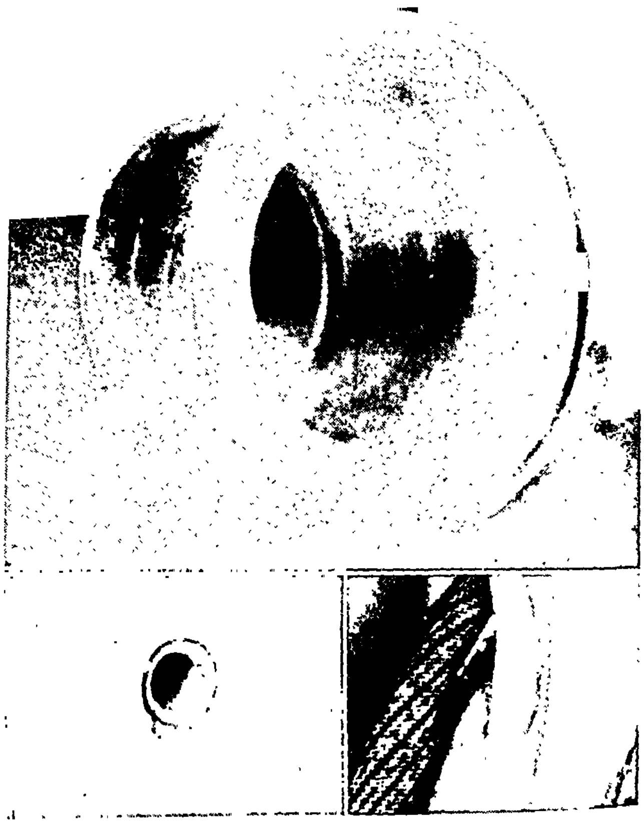
Patients, after laryngectomy, sometimes have difficulty maintaining an adequate size of tracheal stoma. Various reasons for this are (1) a poorly constructed stoma, (2) postoperative infection at the skin mucosal line leading to a contracture ring, (3) spontaneous keloid formation, (4) poor healing in patients who have previously undergone irradiation for cancer of the larynx, and (5) refusal by the patient to undergo tracheal stomal revision.

Obviously, the best treatment for a constricting tracheal stoma is operative revision of the stoma. In most cases this is successful, if careful skin-to-mucosa approximation is achieved without postoperative infection. The handling of this problem is well discussed by Martin.[1] The ideal tracheal stoma, of course, closely approximates the diameter of the trachea itself and requires no tubing.

However, for the reasons listed above, a few patients do not secure an adequate tracheal-skin opening. Unless they wear standard tracheostomy tubes, the stoma soon shrinks down, leaving them feeling suffocated, particularly when sleeping and when turning the head. In our experience, the poorest stomas occur in patients in whom a combined radical laryngectomy and neck dissection has been performed in a previously irradiated field.

About three years ago, one such patient of ours constructed for himself a plastic tracheostomy button (see figure) made of acrylic (methyl methacrylate) rigid tubing, available for industrial use. A section 2.5 cm. long was molded on a lathe after heating, buffed until smooth, and afterwards cleaned with soap and water or hydrogen peroxide. The button has a wide flange on the skin side and a narrow flange on the tracheal mucosal side; it is about 2 cm. in total length when finished. Made to order for the patient, the button pops into place through the skin-tracheal scar with slight pressure and cannot be dislodged by coughing. It well maintains an adequate stomal opening and prevents shrinkage. Its advantages are that it (1) is lightweight, (2) is transparent and not unsightly, (3) is easy to clean, (4) does not impinge upon the tracheal mucosa to cause irritation or ulceration, (5) requires no tape or chain to hold it in place, and (6) is not odorous. The acrylic plastic tracheostomy button helps patients whose tracheal stoma has shrunk and who do not respond to or accept stomal revision.

Five patients who have undergone laryngectomy have replaced their tracheostomy tubes with acrylic plastic tracheostomy buttons (see figure, *lower left* and *right*) for periods varying from six months to three years. (The acrylic tubing, from which the buttons are made, comes in different sizes. The tubing used here was 1/16 in. thick and ½ in., ⅝ in., and ¾ in. in inside diameter.) No irritative or other harmful effects from the wearing of these buttons have been observed in any patient. Methyl methacrylate solid appears to be inert in human tissue; it is used extensively in dental prostheses and has been imbedded in tissue without local or systemic effect.[2] Our patients are delighted with the buttons as compared with the standard metal tracheostomy tubes. The disadvantage of the button is that it must be custom made for each patient so that it fits snugly and cannot be dislodged by coughing.



Oblique view of plastic tracheostomy button (× 3). *Lower left*, button in place. *Lower right*, side view of button in place. Outer flange is seen projecting slightly above skin surface. This can be corrected with further fitting.

Recently, Jacobs and Affeldt[3] reported on a plastic tracheostomy plug, different in principle and design from ours, used advantageously in postpoliomyelitic children. They list objections similar to ours to the use of standard silver and plated metal tubes over long periods.

305 W. Broadway (2).

From the Department of Surgery, University of Louisville School of Medicine. Former fellow in surgery of the National Cancer Institute and the American Cancer Society.

Information about commercially available tubing and the molding of it has been supplied by Rohm & Haas Co., Philadelphia, and the Cadillac Plastic Co., Detroit.

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A ONE-DROP METHOD FOR DETECTION OF ALBUMINURIA

Edwin M. Knights Jr., M.D.
and
Victor Jablokow, M.D., Detroit

A tablet test for albuminuria, requiring but one drop of urine, has been studied in the department of pathology of Harper Hospital. The test is based on the effect of protein on a pH indicator, a phenomenon first described by Sorensen[1] in 1909. This effect, the so-called protein error of indicators, has long been an obstacle to biochemists attempting to use indicators to measure the pH of body fluids. It was later adapted to qualitative tests for proteins by Feigl and Anger[2] and by Ishidate and Sakaguchi.[3] The latter authors, Joukovsky and Vandervelden,[4] and Ketomaa and Ruosteenoja[5] studied large numbers of pH indicators, finally selecting the potassium salt of tetrabromophenolphthalein as most desirable for serum protein measurements. Exton[6] devised a colorimetric test for albuminuria in 1925 with use of sulfosalicylic acid and bromphenol blue. He noted that bromphenol blue apparently stabilizes the sulfosalicylic-protein precipitate by being absorbed on the particles and giving them a yellow color.

The test for albuminuria described here (Albutest) utilizes bromphenol blue as the indicator. This is combined with a salicylate buffer and a cellulose base in a small yellow tablet. The tablet turns through a color range from pale yellow to deep blue in the presence of increasing amounts of protein. In the following procedures results were compared against those produced with sulfosalicylic acid and with the Kingsbury-Clark quantitative test.[7] The sulfosalicylic acid procedure employed was essentially that of Exton;[8] which uses a solution containing 5% of sulfosalicylic acid and 10% of sodium sulfate. Approximately 3 ml. of urine is mixed with 1 ml. of reagent in a small tube and the mixture warmed over a flame. The tube is then viewed against a black background with a strong light shining through the solution.

The tablet test is performed as follows: 1. Place one drop of urine on the tablet, using a disposable drinking straw for transfer. 2. After the urine drop has been absorbed, add two drops of tap water and allow them to be absorbed. 3. Read after 10 seconds, grading from negative to 3 + in comparison with color photographs provided (the color changes from pale yellow to deep blue).

Results of Investigations

In order to evaluate the accuracy and usefulness of this test, the following investigations were carried out in our laboratories.

Test 1.—Two thousand fourteen random urine samples received in the urinalysis laboratory were tested independently by both the tablet and the sulfosalicylic acid methods, and results were compared.

Results: As can be seen in table 1 there was close agreement between the two tests in 81% of the cases, with 59% negative and 22% positive by both tests. In 18% of the urines there was some difference in reported sensitivity, with the sulfosalicylic acid reaction usually proving slightly more sensitive. The tests disagreed in 1% of the reactions. The disagreement in this 1% is not entirely explained, although differences of reactivity, errors of performance, and errors of recording probably account for some of the disparity. False-positive tests with the tablet were extremely rare, but may occur in strongly alkaline decomposed urines.

Test 2.—In order to evaluate the sensitivity of the sulfosalicylic acid procedure under its exact conditions of usage in this laboratory and to com-

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From the Department of Pathology, Harper Hospital.

pare it with the colorimetric test, human albumin was added in serial dilutions of negatively testing pooled urine specimens. Dilutions of human albumin (25% Albumisol) were made in varying amounts from 0 to 300 mg. per 100 ml. All samples were then "blind tested" in the usual manner.

Table 1.—*Comparison of Tests on 2,014 Random Urine Samples*

Sulfosalicylic Acid Results	Results with Albutest Negative	Trace	1+	2+	3+
Negative	1,192	10	13	2	2
Trace	266	49	19	1	1
1+	76	38	140	10	21
2+	6	4	33	10	31
3+	1	2	15	6	31
4+	3	0	2	3	27

Results: The results obtained on 64 different samples are shown in table 2. Note that quantities of added albumin as small as 1 to 7 mg. per 100 ml. gave trace reactions to the sulfosalicylic acid. Albumin concentrations of 10 mg. per 100 ml. or higher were necessary to give a trace or positive reaction with the tablet. No false-positive reactions were encountered with either test. The tablet test was found to correspond quite closely with the results with sulfosalicylic acid.

Test 3.—Urines giving a positive test for albumin by the sulfosalicylic acid method were tested quantitatively by the Kingsbury-Clark procedure. These urines were then diluted serially and retested by the Kingsbury-Clark and tablet techniques and comparative findings were recorded. As in other experiments, these samples were tested as unknowns.

Results: As in test 2, the colorimetric tablet test showed slightly less sensitivity than the sulfosalicylic acid reagent. Individual specimens demonstrated somewhat lower reactivity of some naturally occurring urinary proteins as compared with equivalent amounts of added human albumin. Results are shown in table 3.

Table 2.—*Relative Sensitivity in Sixty-four Urine Samples with Added Human Albumin*

Protein Content, Mg./100 Ml. of Urine	Results with Sulfosalicylic Acid Negative	Trace	1+	2+	3+	4+	Results with Albutest Negative	Trace	1+	2+	3+
0	10						16				
1 to 7		2					4				
2 to 5	5	10					26	1			
6 to 9		4	1				6	1			
10 to 19		4	6				13	3	1		
20 to 39			10	6	2		1	14	14	1	
40 to 59					1	1		3	1		
60 to 99				3	3	1			8	4	2
100					1	7			1	5	7
300						3					3

Test 4.—Laboratory personnel completely unfamiliar with the testing procedure were given 18 coded urine specimens containing human albumin in five varying concentrations. These albumin concentrations were 0, 10, 20, 30, and 100 mg. per 100 ml. of human albumin added to negatively testing urines (sulfosalicylic acid method). Results were reported as negative, trace, small, moderate, or large, based on the color change of yellow to blue in the tablet. Each series of urine dilutions was read by three persons for whom the test was a new procedure. Results were checked by technologists familiar with the reaction. Three hundred sixty tests were performed by the inexperienced plus the experienced personnel.

Table 3.—*Relative Sensitivity of Sixty-six Urine Samples with Naturally Occurring Protein*

Protein Content, Mg /100 Ml. of Urine	Results with Sulfosalicylic Acid Negative	Trace	1+	2+	3+	4+	Results with Albutest Negative	Trace	1+	2+	3+
2 to 5	19	7					24				
6 to 9	1	8	1				8	1			
10 to 19		8	4	1			12		1		
20 to 39			11	2			4	7	2		
40 to 59			2	2				3	3		
60 to 99			1	8	8	1		9	19	2	1
100 to 199					4	3			8		
600						2			1	1	
Over 600						6				1	[illegible]

Results: Concentrations of albumin of 100 mg. per 100 ml. were consistently read as positive; 30 mg. per 100 ml. was read as positive in 37 of 54 instances. Lesser amounts were usually interpreted as negative. There were no false-positive tests. As soon as a technologist had acquired some skill in reading the test, all of the concentrations of 30 mg per 100 ml. of human albumin and *most* of those of 20 mg. per 100 ml. were picked up, being read as "trace" (table 4).

Test 5.—Consecutive urines obtained from three patients with albuminuria were checked by the tablet test, the sulfosalicylic acid test, and the Kingsbury-Clark quantitative procedure.

Table 4.—*Performance with Albutest: Results by Inexperienced and Experienced Examiners*

Protein Content Mg./100 Ml. of Urine	Examiners	Percentage of Results Negative	Trace	Small	Moderate	Large
0	Inexperienced	100	0	0	0	0
	Experienced	100	0	0	0	[illegible]
10	Inexperienced	81	19	0	0	0
	Experienced	89	11	0	0	0
20	Inexperienced	63	30	7	0	[illegible]
	Experienced	6	78	16	0	[illegible]
30	Inexperienced	22	46	19	13	0
	Experienced	0	44	56	0	0
100	Inexperienced	0	2	22	25	51
	Experienced	0	0	33	17	50

Results: The 26 urines in this series varied in protein concentration from 65 to 1,200 mg. per 100 ml. The tablet test was consistently positive and agreed closely with the sulfosalicylic acid and Kingsbury-Clark findings.

Test 6.—Due to the frequent association of hematuria and proteinuria, experiments were carried out to evaluate the reactivity of whole blood with the colorimetric tablet test and the sulfosalicylic acid test. Human blood with a hemoglobin content of 15.7 Gm. per 100 ml. was added to urine that was completely negative with both tests.

Results: A 1 to 3,200 dilution of this blood and urine was the highest dilution to give faint reactions with either test. If the added blood contained 5 million red blood cells per cubic millimeter, this 1 to 3,200 dilution of blood in the urine would result in many erythrocytes per high-power field by techniques commonly used in quantitating microscopic hematuria. Therefore, a considerable number of erythrocytes may be present in urine, yet there would still be insufficient protein to give a positive protein test by either of the methods.

Comment

The tablet method of albumin determination based on an indicator reaction was studied from the aspect of its possibilities as a routine laboratory procedure. It proved to be a rapid, easy method, requiring a minimum amount of urine and no glassware or heat. From this standpoint it is a particularly valuable innovation in pediatrics, where urine specimens are likely to be scanty. The complete elimination of glassware makes it an attractive procedure for routine screening of large numbers of urine specimens.

The ability of technologists to interpret the roughly quantitative yellow to blue color changes improved considerably with experience. The inability of the test to pick up "trace" amounts of albumin might be considered a handicap; this would depend on how much clinical significance a physician would put on the presence of 10 to 20 mg. per 100 ml. of albumin in the urine. We do not think this is a serious fault. Correlation with the sulfosalicylic acid method as outlined in the test was relatively good, and serious differences in reaction were encountered in only 1% of over 2,000 urine specimens tested. These include decomposed or extremely alkaline urines. These will turn the tablet blue, because bromphenol blue is also an indicator on the alkaline side. Tablets retained their sensitivity in colored bottles at room temperature for periods of four months during the study.

Summary

A new tablet test for albuminuria has been evaluated. It is based on color changes from yellow to blue in a tablet containing a bromphenol blue indicator and salicylate buffer. The test requires only one drop of urine and no glassware or heat. The test appears to be stable at room temperature for at least four months. Roughly quantitative results agree well with the sulfosalicylic acid and Kingsbury-Clark tests when albumin is present in concentration above 20 mg. per 100 ml. Some experience is required in order to recognize color changes in the range from 20 to 30 mg. per 100 ml.

The urine protein test, Albutest, is a registered trademark of Ames Company, Inc., Elkhart, Ind.

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Renal Function Test.—Correlations between renal histology obtained by percutaneous renal biopsies, urine analyses, nitrogenous substances in the blood, and three simple tests of renal function (urea clearance, P. S. P. [phenolsulfonphthalein] excretion, and specific gravity concentration tests) were illustrated by a study of 24 patients with lupus nephritis and of 9 patients with SLE [systemic lupus erythematosus] and normal kidneys. Histologic analyses assessed over-all kidney damage for 57 biopsies and 8 autopsies, and damage to glomerular structures, tubules, interstitium, and vessels was graded semiquantitatively from 0 to 4+. On 13 occasions normal urine analyses were found when there was histologic damage to the kidneys. Good correlations were found between the degree of renal damage and the three simple tests of renal function. When several studies were done on the same patient, serial function studies reflected serial histologic changes. With mild renal changes a battery of tests was more useful in detecting abnormalities than single tests. The clinical value of percutaneous renal biopsy in diagnosis, management, and prognosis of renal disease is evident when compared with simple tests of renal function.—R. M. Kark, F. R. C. P., and others, Simple Tests of Renal Function in Health and Disease, *A. M. A. Archives of Internal Medicine*, February, 1957.

over present benefit levels for those who delay retirement beyond age 65 until age 72 is reached. (Thus, the retired worker who delayed retirement until age 72 could receive an additional $8.33 monthly, or a total of $126.83 instead of $118.83.) This measure is identical to H. R. 8883 by Representative Kean (R., N. J.), previously reported. The bill was referred to the Ways and Means Committee.

Representative Forand (D., R. I.), in H. R. 9467, would amend the Social Security Act "to increase benefits payable under the Federal old-age, survivors, and disability insurance program, to provide insurance against the costs of hospital, nursing homes, and surgical service for persons eligible for old-age and survivors insurance benefits." From the Social Security Trust Fund the cost of hospital care would be paid for 60 days in any year in semiprivate hospital accommodations and nursing home care up to a combined total of 120 days in a 12-month period. The patient would be given the freedom of choice of a surgeon for necessary surgical care; the surgeon would be paid by the OASI Trust Fund. The surgeon must be certified by the American Board of Surgery or be a member of the American College of Surgeons. For oral surgery the patient could select a duly licensed dentist. The physicians would be paid such amounts agreed to by them or as prescribed in regulations made by the Secretary of Health, Education, and Welfare. The medical benefits would be in addition to the dollar retirement or survivor payments already provided for in the law. The cash monthly benefits would be increased across the board, with an individual monthly benefit being increased from $108.50 to $151.80, and family benefits increased from the maximum of $200.00 to a maximum of $305.00. The base upon which the taxes would be levied would be increased from $4,200 to $6,000, and the present rates would be increased one-half of 1% for both employee and employer in 1959, and the self-employed would pay three-fourths of 1% more. By 1975, the employee and employer would each pay 4¾% for a total of 9½% of wages up to $6,000 annually. For the self-employed the tax would be 7⅛% on the first $6,000 for self-employment income or $427.50 annually. To finance the increases in total payments for retirement benefits, the author, it is reported, considers the increase of the tax base from $4,200 to $6,000 as sufficient. The rate increase would be assigned solely to finance the hospitalization and surgical benefits. Both bills were referred to the Ways and Means Committee.

Public Assistance Amendments

Representative Fulton (R., Pa.) has introduced H. R. 9485, a measure similar to a number of pending bills. Among the major provisions are those described below.

Old Age Assistance.—In determining need the state must disregard the first $75 per month of earned income, the ownership of a house assessed at a maximum of $7,500, the financial status of the individual's family, donations of surplus food from the Commodity Credit Corporation, and the first $1,800 in value of personal property; there must be no discrimination based on sex; the age requirements for old-age assistance recipients must be the same as those for old-age benefits under the Social Security Act; and residence requirements must not exceed one year immediately preceding the application for assistance,

Aid to Dependent Children.—In determining need the state agencies must disregard the first $25 per month of the earned income of a child and the first $50 per month of income earned by his parent or guardian, the ownership of a home assessed at less than $7,500, and the donation of any foods from the Commodity Credit Corporation; there must be no discrimination based on sex; and provision must be made for direct payments for dependent children not satisfying state residence requirements.

Aid to the Blind.—In determining need the state agencies must disregard the first $75 of the earned income per month, the ownership of a home assessed at less than $7,500, the financial status of the individual's family, and donations of surplus food from the Commodity Credit Corporation; there can be no discrimination on the basis of sex; residence requirements should not exceed one year immediately preceding application for assistance; and provisions must be made for direct payments to individuals not satisfying residence requirements.

Aid to the Permanently or Totally Disabled.—In determining need the state agencies must disregard the first $75 per month of earned income, ownership of a home assessed at less than $7,500, any donations of surplus food from the Commodity Credit Corporation, financial status of individual's family, and the first $1,800 of personal property; there must be no discrimination based on sex; and provisions must be made for direct payments to individuals not satisfying state residence requirements. This measure was referred to the Committee on Ways and Means.

Mosquito Research and Control Grants

Representative Moulder (D., Mo.) proposes, in H. R. 9216, "to provide for research and technical assistance relating to the control of salt-marsh and other pest mosquitoes of public health importance and mosquito vectors of human disease, to protect wetland resources." Grants would be given through the surgeon general of the Public Health Service to encourage state and local governments in (1) aiding research to devise methods for the extermination and control of mosquitoes and (2) providing federal technical facilities and services to aid states in the formulation and execution of state and local mosquito research and control programs. In addition, the Secretary of the Interior, through the Fish and Wildlife Service, would conduct technical studies and demonstrations on mosquito control hat are compatible with management of marshes, vamps, and other wetlands for economic, recrea- onal, and fish and wildlife conservation uses." This ill was referred to the Interstate and Foreign Com- ierce Committee.

ospitalization for the Aged and Disabled

Representative Roberts (D., Ala.), in H. R. 9448, roposes "to amend title II of the Social Security ct to provide insurance thereunder against the cost hospitalization for insured aged persons and their ependents and survivors, and for insured disabled ersons." This bill is identical with H. R. 4765 by epresentative Dingell (D., Mich.), previously re- orted. The Social Security Trust Fund would pro- de payments for retirement and the Disability isurance Trust Fund would provide payments for sability. This bill was referred to the Committee 1 Ways and Means.

ir Pollution Control

Representative Schenck (R., Ohio), in H. R. 9368, oposes "to prohibit the use in commerce of any otor vehicle which discharges unburned hydro- rbons in an amount which is found by the Sur- on General of the Public Health Service to be ngerous to human health." The surgeon general ould determine the standards "as to the amount of burned hydrocarbons which is safe, from the andpoint of human health (with particular refer- ice to the carcinogenic nature of unburned hydro- rbons), for a motor vehicle to discharge into the mosphere." Motor vehicles which would discharge drocarbons in excess of this amount could not used in interstate commerce. Punishment would a fine of not more than $5,000, or imprisonment not more than one year, or both. This bill was ferred to the Interstate and Foreign Commerce ommittee.

ax Deduction for Educational Purposes

Representative Schwengel (R., Iowa), in H. R. 414, proposes to amend the Internal Revenue Code allow a taxpayer, in calculating his income tax, deduct from his adjusted gross income those mounts expended for himself or any of his depend- nts for tuition paid to institutions of higher learn- ig or for books and periodicals and living expenses icurred by attending school away from home. An istitution of higher learning is defined as an insti- ition offering education at a level above the 12th rade.

Representative Laird (D., Wis.), in H. R. 9599, roposes to allow a taxpayer, in calculating his in- ome tax, to deduct from his individual income tax not his adjusted gross income) 30% of the total mount paid during the year to educational insti- utions above the eighth grade for tuition or fees whether for himself or for his dependents. The above measures were referred to the Committee on Ways and Means.

Medical Expenses Tax Deduction

Representative Miller (R., Md.), in H. R. 9417, proposes to amend the Internal Revenue Code "to permit a taxpayer who has attained the age of sixty-five and is disabled and whose spouse has attained the age of sixty-five and is disabled, to deduct up to $20,000 of medical expenses incurred in any year." This measure was referred to the Ways and Means Committee.

Presidential Commission on Blindness

Representative Fulton (R., Pa.), in H. R. 9484, *proposes "to establish* a temporary Presidential commission to study and report on the problems relating to blindness and the need of blind persons." This commission would number 21 and would be comprised of "leaders in medicine, education, social work, psychology, rehabilitation, and related professions, representatives of public and voluntary agencies providing services to blind persons (including those which are not concerned exclusively with the blind), and representatives of industry, labor, and the general public." An interim report would be submitted not later than Jan. 31, 1959, and a final report a year later. This measure was referred to the Committee on Education and Labor.

TASK FORCE BEGINS STUDIES

The A. M. A. task force appointed to study proposals for hospitalization of the aged financed by Social Security funds, met in Chicago Sept. 27, and set Friday, Nov. 15, as the date for another meeting. All members of the committee, headed by Dr. George M. Fister, Ogden, Utah, a member of the Board of Trustees, were present, along with several staff members from A. M. A. headquarters and the A. M. A. Washington office.

Walter Polner, Ph.D., of the staff of the A. M. A. Bureau of Medical Economic Research, research director for the task force, is collecting information which the task force will review, then endeavor to define the problem, outline the programs and activities now being carried on to meet them, and recommend what additional actions should be taken.

HOME CARE PROGRAMS

The complete study of "Organized Home Care Programs in the United States," part of which was published in The Journal, May 18, 1957, is available from the Council on Medical Service of the American Medical Association. The report discusses the organization and operation of 31 home care programs presently under way in this country and includes a more detailed description of 8 of the individual programs surveyed. Single copies are available without charge; additional copies are $1.00 each.

MEDICAL NEWS

ILLINOIS

Chicago

Medical History Meeting.—An open meeting of the Society of Medical History of Chicago will be held at the Institute of Medicine Nov. 13 at 8:00 p. m. Dr. Carroll L. Birch, professor of medicine, University of Illinois College of Medicine, will present "Subsequent History of One of Leeuwenhoek's Animalcules," and Dr. Lester S. King, clinical professor of pathology, University of Illinois College of Medicine, will present "Medical Ethics in the Eighteenth Century."

LOUISIANA

Society News.—The officers of the Louisiana Pathology Society are: Dr. William S. Randall, Baton Rouge, president; Dr. Ralph M. Hartwell, New Orleans, vice-president; and Dr. Samuel R. Staggers, New Orleans, secretary-treasurer.

MONTANA

State Medical Election.—The Montana Medical Association has installed the following officers: Dr. John A. Layne, Great Falls, president; Dr. Herbert T. Caraway, Billings, president-elect; Dr. Theodore R. Vye, Billings, secretary-treasurer (reelected); Dr. Leonard W. Brewer, Missoula, vice-president; and Dr. William E. Harris, Livingston, assistant secretary-treasurer.

NEBRASKA

Eben J. Carey Memorial Lecture.—The seventh annual Dr. Eben J. Carey Memorial Lecture, sponsored by Creighton University and the Phi Chi Medical Fraternity, will be delivered Nov. 20, 8:30 p. m., at the Creighton University Student Union Building, Omaha, by Dr. John S. Hirschboeck, dean, Marquette University School of Medicine, Milwaukee, Wis., on "New Developments in Pernicious Anemia." The lecture is open to all medical personnel and their friends without charge. The American Academy of General Practice will allow one and one half hours credit, category one, for attendance.

NEW YORK

Personal.—Dr. Seymour S. Bluestone, former medical coordinator at the Rehabilitation Center of the New York University–Bellevue Medical Center, New York City, has been named director of the New York State Rehabilitation Hospital at West Haverstraw, succeeding Dr. Austin J. Canning, who is retiring.

New York City

Hospital News.—Close to 5 million dollars has been raised toward an ultimate goal of 11 million dollars for a complete renovation and modernization of Lenox Hill Hospital, according to the hospital's annual report. Construction of the first of three new buildings being planned is already under way. Replacing the hospital's oldest building, the new 12 story unit will provide a minimum accommodation of 180 beds, bringing the total bed complement of the hospital to 622 beds.

Professor Loewi Honored.—Prof. Otto Loewi, Nobel Prize winner in medicine (1936) for the discovery of the chemical transmission of the nervous impulse, was presented with the Schmiedeberg Plakette by the German Pharmacological Society Oct. 16. Dr. Otto Krayer, professor of pharmacology at Harvard University Medical School, Boston, made the presentation on behalf of the society. Dr. Loewi was born in Frankfurt am Main, Germany, and has taught there, and in Austria, and the United States. He is now research professor of pharmacology in the college of medicine of New York University–Bellevue Medical Center.

Endow Chair of Plastic Surgery.—A one-million-dollar grant to New York University–Bellevue Medical Center from the Society for the Rehabilitation of the Facially Disfigured, made possible by the Avalon Foundation, provides for an Institute of Reconstructive Plastic Surgery, to engage in research, teaching, and treatment of patients. It also provides for the first endowed chair of plastic surgery, to be known as the Lawrence D. Bell Chair of Plastic Surgery, at the Medical Center. Dr. John Marquis Converse, professor of surgery at the College of Medicine and noted plastic surgeon, wi

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Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

be the first incumbent. The late Lawrence D. Bell, aviation pioneer and founder of the Bell Aircraft Corporation, was a founder of the society and its president until his death in October, 1956. The new institute will be located in a modern 19-story hospital to be constructed at the Medical Center. The Society for the Rehabilitation of the Facially Disfigured was chartered in New York on Oct. 29, 1951, for the purpose of establishing a center and founda-ion to promote the welfare of the facially disfigured; to establish fellowships and scholarships; to promote program of research; and to contribute to the raining of competent personnel. The total program vill be carried out by the division of plastic sur-gery of the department of surgery at New York niversity College of Medicine, under the direction Dr. Converse.

ersonal.—Dr. Alfred Yankauer, director, Bureau of aternal and Child Health of the New York State ealth Department since 1952, has been granted a ie-year leave of absence to accept a position as edical officer with the World Health Organization. e will become visiting professor of social pediatrics the University of Madras Medical College, Mad- s, India.—Dr. Alexander Brunschwig has re- rned from Durban, Natal, South Africa, where he tended the Congress of the Medical Association of uth Africa and presented lectures and operative emonstrations. Dr. Brunschwig is chief of the gyne- logy service at Memorial Center for Cancer and llied Disease and professor of surgery, Cornell niversity Medical College.—Dr. Jerome Geren- sy has been appointed professor of cardiology at e Faculty of Medicine of the University of Santo omingo, Ciudad Trujillo, Dominican Republic.

ENNSYLVANIA

ociety News.—The officers for the Pennsylvania adiological Society for 1957-1958 are: Dr. Lewis E. ter, president; Dr. John H. Harris, president-elect; r. Joseph E. Malia, first vice-president; Dr. Paul S. riedman, second vice-president; Dr. Walter P. Bit- er, secretary-treasurer; and Dr. Carl B. Lechner, ditor. The 1958 meeting will be held on May 15-17, t the Penn Sheraton Hotel, Pittsburgh.—The fol- wing officers of the Pennsylvania Academy of hysical Medicine and Rehabilitation have been lected: president, Dr. Derrick H. Cross, Greens- urg; vice-president, Dr. William J. Erdman II, hiladelphia; and secretary-treasurer, Dr. J. Murl ohnston, Pittsburgh.

hiladelphia

emberton Memorial Lecture.—The seventh annual r. Ralph Pemberton Memorial Lecture will be iven Nov. 12, 8:30 p. m., at the Philadelphia County Medical Society, by Dr. John H. Talbott, head, department of medicine, University of Buffalo School of Medicine. His subject will be "Recent Advances in Our Understanding of Gout and Their Therapeutic Implications." Physicians, residents, interns, and medical students are invited. Category II credit is available for members of the Academy of General Practice.

Grant for Mental Health Study.—The Institute of Neurological Sciences of the University of Pennsylvania School Medicine will use a Ford Foundation grant of $219,450 to broaden its studies of the nervous system, particularly as those studies are related to mental health. The institute's new work in this field, made possible by the grant, includes research and research training in the basic sciences, and in psychiatry. The psychiatric portion of the project will be done in collaboration with the department of psychiatry, of the School of Medicine, and the Institute of the Pennsylvania Hospital. Dr. Louis B. Flexner of the Institute and the School of Medicine will direct the project.

WISCONSIN

Tuberculosis in Milwaukee's Skid Row.—In the Milwaukee Skid-Row area, where the rate of active tuberculosis is reported to be 25 times as high as in the general population, a continuous chest x-ray program has been established at the Milwaukee Rescue Mission. Through the Mission's free employment service, these men are placed on some 1200 jobs per month, according to Mr. Lyman E. Davis, Mission superintendent. Many of these jobs are in restaurants or as handymen around homes where there is a recognized danger of infection to others. Previous x-ray clinics at the Mission, conducted semi-annually, have uncovered one active case of tuberculosis for each 100 men x-rayed. The service will also be available to anyone else desiring a chest x-ray, especially other men and families living in the area. Local organizations cooperating in the Rescue Mission program include the General Electric Company, x-ray department, which supplied and installed the x-ray equipment, the Wisconsin Anti-Tuberculosis Association, which will buy the first year's supply of x-ray film and whose staff physicians will supervise the program and read the films, and the Milwaukee Health Department, which will do follow-up studies and tests and arrange for isolation and hospitalization of suspected cases.

PUERTO RICO

Construct Nuclear Center.—The U. S. Atomic Energy Commission and the University of Puerto Rico have signed a contract for the operation of a nuclear training center to be constructed in Puerto

Rico by the commission. The center was authorized by the last session of the U. S. Congress, and $2,800,000 was appropriated for the start of construction and initial operation of the center. John I. Thomas, former deputy manager of the commission's Hanford Operations Office, Richland, Wash., has been appointed resident manager of a new permanent commission office to be established in Puerto Rico.

The goal is to develop a comprehensive program for research and training—in the Spanish language and available to students from the American Republics—in nuclear science and engineering and the peaceful applications of nuclear energy in medicine, agriculture, and industry. The University of Puerto Rico during the 1956-1957 academic year had 313 students from 19 American Republics in its student body. The total enrollment is more than 16,000, with a full-time faculty numbering 1,064. Plans provide for later construction of a training and research building for medical and biological applications of nuclear energy, to be located near the new medical center in Rio Piedras, and some additional training and laboratory facilities at Mayaguez.

GENERAL

Award in Biological Psychiatry.—The Society of Biological Psychiatry is offering an annual award which was made possible by the A. E. Bennett Neuropsychiatric Research Foundation. The award will consist of traveling expenses to the annual meeting plus expenses at the meeting, in addition to an honorarium of $250. It will preferably be given to a young investigator, not necessarily a member of the society, for work which has recently been accomplished and not published. The honorarium will be awarded at the annual banquet. Papers in quadruplicate should be submitted to Arthur A. Ward, head, Division of Neurosurgery, School of Medicine, University of Washington, Seattle 5, Wash., or to Dr. Harold E. Himwich, Chairman, Committee of Award, Galesburg State Research Hospital, Galesburg, Ill.

Bahamas Medical Conference.—The fourth Bahamas Medical Conference will be held Dec. 1-15 at the Fort Montagu Beach Hotel in Nassau. Reservations should be made by writing directly to Mr. John L. Cota, general manager of the hotel. About 35 papers are scheduled for presentation. A general discussion on hypertension is scheduled for Dec. 4. "Letheon—The Cadenced Story of Anesthesia," will be presented Dec. 8 by Dr. C. D. Leake. Reservation fee is $75. Checks should be made out to the order of the "Bahamas Medical Conference" and should be sent to Mr. Cota in making reservations. Time is made available within the program for recreational activities. American and Canadian citizens do not require passports and vaccination certificates are not required. The fifth Bahamas Medical Conference is being planned for after Easter in April, 195 For information write Dr. B. L. Frank, 1290 Pi Ave. West, Montreal, Canada.

Proctology Award Contest.—The International Academy of Proctology announces its annual cash prize and certificate of merit award contest for 1957-195 The best unpublished contribution on proctolog or allied subjects will be awarded $100 and a certificate of merit. The winning contribution will be selected by a board of impartial judges, and all decisions are final. The award of the first prize will be made at the annual convention of the academy, April 11, 1958, at the Hotel Del Prado, Mexico Ci Mexico. The International Academy of Proctolo reserves the exclusive right to publish all contri tions in its official publication, *The American Jo nal of Proctology*. Entries are limited to 5,000 wor must be typewritten in English, and must be s mitted in five copies not later than Feb. 1, 19 Entries should be addressed to Dr. Alfred J. Cant International Secretary, International Academy Proctology, 147-41 Sanford Ave., Flushing, N.

Fellowships for Pediatric Residency.—A reside fellowship program, designed to encourage you physicians to specialize in pediatrics, has been est lished by Wyeth Laboratories which firm will init ly award 20 fellowships annually to interns or th who have recently completed their internship. E grant will cover the required two-year pedia training program and will carry an annual stip of $2,400. The cost of the first three years of program will be $195,000. The names of the recipients will be announced in the spring of 1 and the fellowships will be effective the follow July 1. Participation is limited to citizens of United States and Canada. The fellowship recipie will be selected by a committee composed of e nent pediatricians, representing both the clinical educational aspects of that specialty. Those rece ing grants may attend the hospitals of their o choosing, as long as the residency training progr is properly accredited.

Annual Cytology Council Meeting.—The fifth nual meeting of the Inter-Society Cytology Coun will be held Nov. 14-16 at the Bon-Air Hotel, Aug ta, Ga. The program will comprise six consecut sessions at which over 40 papers will be present The first session will cover the topic, "Borderli Cases of Uterine Cancer," and will include a cyt ogy panel, a gynecology panel, a pathology pa and an integrated panel discussion, "Carcinoma-i Situ of the Cervix," at noon, Nov. 14. Dr. George Papanicolaou, president of the council, will pres "Observations on the Behavior of Endometrial C in Tissue Culture" with Dr. Frances V. Maddi, N York City. Dr. Violette Nouvo, Paris, France, present two papers: "Pregnancy and Cancer of t

Cervix" and "Cytolysis." Technical advances in cytology will be discussed at the sixth session. Regisration fee for professional personnel is $5. Attendance is not limited to members. Entertainment ncludes the annual dinner Nov. 14. For information write Dr. Paul F. Fletcher, Secretary-Treasurer, Inter-Society Cytology Council, 634 N. Grand Blvd., St. Louis 3, Mo.

Society News.—The **American Congress of Physical Medicine and Rehabilitation** has announced the election of the following officers for 1957-1958: Dr. Donald L. Rose, Kansas City, Kan., president; Dr. Arthur C. Jones, Portland, Ore., president-elect; Dr. Frederic J. Kottke, Minneapolis, first vice-president; Dr. Donald A. Covalt, New York, second vice-president; Dr. Donald J. Erickson, Rochester, Minn., third vice-president; Dr. Jerome S. Tobis, New York, ourth vice-president; Dr. Louis B. Newman, Chicago, fifth vice-president; Dr. Frances Baker, San Mateo, Calif., secretary; Dr. Frank H. Krusen, Rochester, Minn., treasurer; Dr. Walter J. Zeiter, Cleveland, executive director; and Miss Dorothea C. Augustin, Chicago, executive secretary.——At the 14th annual meeting of the **American Medical Writers' Association** the following officers were lected for 1957-1958: president-elect, Dr. Morris Fishbein, Chicago; first vice-president, Dr. Austin mith, Chicago; second vice-president, Dr. Karl A. Menninger, Topeka, Kan.; editor, Dr. Raymond C. Pogge, Cincinnati (reelected); accounting officer, Dr. Alphonse McMahon, St. Louis, (reelected).

Cerebral Palsy Meeting.—The 11th annual meeting f the American Academy for Cerebral Palsy will be eld Nov. 24-27 at the Hotel Roosevelt, New Orleans. The presidential address will be given by Dr. Nicholson J. Eastman, Baltimore. A symposium, The Role of Erythroblastosis and Kernicterus in Cerebral Palsy," will be moderated by Dr. Chester A. Swinyard, Salt Lake City. The program includes he following topics by invited speakers:

Muscular Dystrophy: Biopsy and Tissue Culture Studies, Drs. Ruth S. Geiger, and J. S. Garvin.

Reflex Therapies in the Treatment of Cerebral Palsy, Dr. William S. Hatt, Sarasota, Fla.

The Use of Respiration Equipment in the Control of Breathing Dysrhythmia in Athetosis (Experimental Study), Dr. Robert Harrington, Los Angeles.

A film, "Proprioceptive Neuromuscular Function" will be presented by Dr. Sedgwick Mead, Vallejo, Calif. Exhibits and a ladies' program are arranged. Entertainment includes the annual banquet, Nov. 25. Registration fee is $10 for members, $15 for nonmembers. For information write Dr. Raymond R. Rembolt, Secretary-Treasurer, University Hospital-School, Iowa City, Iowa.

Meeting of Teachers of Preventive Medicine.—The 14th annual meeting of the Association of Teachers of Preventive Medicine will be held Nov. 10 at the Hotel Cleveland, Cleveland. The following round-table discussions are planned: epidemiology of cancer, illness surveys in population groups, epidemiology of coronary disease and hypertension, epidemiology of poliomyelitis, and epidemiology of adenovirus infections. The program includes the following topics and speakers:

Epidemiology of Cancer, Dr. Brian MacMahon.

Multiple Screening versus Complete Examinations, Dr. Ray E. Trussell, Jack Elison, Ph.D., and Patricia Collette.

Familial and Epidemiologic Aspects of Coronary Disease and Hypertension, Dr. Caroline Thomas.

Influence of Natural and Artificially Induced Immunity on Alimentary Infections with Polioviruses, Dr. John P. Fox, Dr. Henry M. Gelfand, Dorothy R. LeBlanc, R.N., and Dighton F. Rowan.

Use of a Population of Families in Defining the Epidemiology of Adenovirus Infections, Drs. William S. Jordan, George F. Badger, Constance Curtis, and John H. Dingle.

A report of the Amsterdam meeting of the International Corresponding Club, devoted to "International Study Group on Current Epidemiological Research," will be given by Dr. Harold N. Willard. Dr. Leroy E. Burney, Surgeon General, Public Health Service, will present an address, "The Public Health Service and Departments of Preventive Medicine," at the dinner and evening session. For information write Dr. C. Howe Eller, School of Medicine, Department of Community Health, 323 E. Chestnut St., Louisville, 2, Ky.

Dermatologists Meet in Chicago.—The 16th annual meeting of the American Academy of Dermatology and Syphilology will be held Dec. 7-12 at the Palmer House, Chicago. The John E. Rauschkolb Memorial Lectures will be presented Dec. 9 by Dr. Henry E. Michelson, "The Unusual in Psoriasis"; Dr. Walter B. Shelley, "The Physiology and Biochemistry of Psoriasis"; and Dr. Earl D. Osborne, "The Treatment of Psoriasis." The Fred D. Weidman Memorial Lecture will be given Dec. 10 on "An Oblique View of Medical Public Relations," by Dr. Russell B. Roth. The program includes the following round-table discussions: light sensitive dermatoses and porphyria, techniques in the application of x-ray and radium, eczematous eruptions of the hands, military dermatology, benign diseases of the mucous membranes, eczema of infants and children, and dermatologic photography. A clinical pathological conference will be held Dec. 11 with Dr. Herman Beerman, chairman, department of dermatology, Graduate School of Medicine, University of Pennsylvania, Philadelphia, as chairman. Symposiums and discussion groups are planned. Scientific and technical exhibits have been arranged. Entertainment includes the annual banquet Dec. 11. For information write the American Academy of Dermatology and Syphilology, Dr. James R. Webster, 55 E. Washington St., Chicago 2.

PUBLIC HEALTH SERVICE

Secretary Folsom Urges Further Poliomyelitis Vaccination.—Marion B. Folsom, Secretary of Health, Education, and Welfare, on Oct. 10, summarizing the poliomyelitis season now coming to an end, reported 1,576 paralytic cases so far this year, compared with 7,886 cases two years ago and 5,241 cases last year, before widespread use of the Salk vaccine.

The Secretary noted, "Although all the reduction in paralytic polio may not be due to the vaccine, the vaccine certainly has played a major part in this dramatic progress. And yet supplies already are beginning to pile up. This is the best time for medical societies, local health departments, schools, industries, and individual citizens and physicians to make sure that everyone who needs protection gets it."

Although the vaccine is designed to prevent paralytic poliomyelitis, as distinguished from nonparalytic, the total number of poliomyelitis cases this year also shows a sharp reduction. There have been 4,851 cases so far, compared with 21,667 two years ago, 12,146 one year ago, and an average of 24,928 a year over the past five years. Only 63 cases of paralytic poliomyelitis have been reported among the 28 million persons who have received three injections of vaccine, and not all of these cases have been confirmed yet.

It now appears possible, for the first time, to have enough vaccine available to give protection to substantially all the population under 40 years of age before the start of next year's season of peak incidence. While attention should be given particularly to vaccinating teen-agers, poliomyelitis can and does strike severely at adults. Of the 42 million persons 20 through 39 years of age, 14 million have been vaccinated—3 million with three doses, 5 million with two doses, and 6 million with one dose; but 28 million adults have had no vaccine.

Appoint Assistant for Industrial Cancer Research.—Robert D. Coghill, Ph.D., formerly director of research of Abbott Laboratories, North Chicago, Ill., has been appointed special assistant for industrial research at the Cancer Chemotherapy National Service Center, Bethesda, Md.

The Public Health Service notes that within the past year industry has greatly increased its participation in the national cancer chemotherapy program sponsored by the government and nonprofit agencies. The National Cancer Institute shares expenses with industry through contracts. Such contractual agreements have been made possible by recent congressional appropriation earmarked for this purpose. Dr. Coghill will assume responsibility for all contracts with industry and for recommending solutions to problems arising from cooperative research involving the National Cancer Institute, industrial firms, and investigators in academic institutions. Dr. Coghill has had extensive experience as a scientist serving both government and industry.

Appoint Deputy Surgeon General.—Surgeon General Leroy Burney has announced the appointment of Dr. John D. Porterfield as deputy surgeon general, succeeding Dr. W. Palmer Dearing, who has been appointed assistant director of health in the Office of Defense Mobilization. Since 1939, Dr. Porterfield has had a variety of assignments within and outside the Public Health Service. He has directed programs in regional offices in Chicago and Puerto Rico. In 1947, he was named director of the Ohio State Health Department, and, in 1954, became director of the Ohio Department of Mental Hygiene and Correction. He was recalled to active duty at Public Health Service headquarters in 1956 and was recently appointed assistant surgeon general. He is a charter member of the American Board of Preventive Medicine, a past regent of the American College of Preventive Medicine, and is now a member of the public health advisory committee of the W. K. Kellogg Foundation.

MISCELLANEOUS

Medical Research Fellowships.—The Division of Medical Sciences of the National Academy of Sciences–National Research Council will accept applications for postdoctoral research fellowships until Dec. 1, 1957, for 1958-1959. Details may be obtained from the Division of Medical Sciences, Room 309, 2101 Constitution Ave. N. W., Washington 25, D. C.

The following fellowships are administered by the Medical Fellowship Board. 1. National Research Fellowships in the medical sciences are designed to offer research experience in the basic medical sciences for those who look forward to careers in academic medicine and investigation. 2. Donner Fellowships for Medical Research are governed by the same objectives and conditions as are the NRC Fellowships. Those given fellowships are expected to devote essentially their entire time to research at the fundamental level. Awards are open to citizens of the United States and Canada who hold an M.D., Ph.D., or Sc.D. degree, or the equivalent. Ordinarily fellowships are not granted to persons over 35 years of age. 3. Fellowships in radiologic research are administered for the James Picker Foundation by the Committee on Radiology. Applications will be entertained from candidates seeking to gain research skills leading to investigative careers in radiology. Candidates must hold an M.D., Ph.D., or Sc.D. degree or the equivalent, and should ordinarily not be more than 35 years of age. There are no limitations with respect to citizenship of applicants.

DEATHS

Orton, Henry Boylan ⊕ Newark, N. J., born in Newark, Feb. 6, 1886; Jefferson Medical College of Philadelphia, 1908; specialist certified by the American Board of Otolaryngology, of which he was a director; professor of laryngeal surgery at the New York Polyclinic Medical School and Hospital in New York City; chairman, Section on Laryngology, Otology and Rhinology, American Medical Association, 1948-1949; past-president of the American Laryngological Association, which presented him with the Casselberry and Newcomb awards; past vice-president of the American Academy of Ophthalmology and Otolaryngology which presented him with the Honor Key Award; past-president of the American Broncho-Esophagological Association, New York Laryngological Society, New York Bronchoscopic Society, of which he was a charter member, and the New Jersey Society of Ophthalmology and Otolaryngology; past vice-president of the American Laryngological, Rhinological and Otological Society; in 1953 the Academy of Medicine of Northern New Jersey presented him its Edward J. Ill award; fellow and ex-governor of the American College of Surgeons; member of the New York Academy of Medicine, Essex County Anatomical and Pathological Society, and the Jefferson Medical College Alumni Association; in 1916 served on the Mexican Border and served overseas during World War I; consulting laryngologist at Irvington (N. J.) General Hospital, Monmouth Memorial Hospital in Long Branch, Irvington (N. J.) General Hospital, Monmouth Memorial Hospital in Long Branch, Hackensack (N. J.) Hospital, Morristown (N. J.) Memorial Hospital, Elizabeth (N. J.) General Hospital, Mountainside Hospital, in Montclair, Orange (N. J.) Memorial Hospital, Fitkin Memorial Hospital in Neptune, St. Michael's, St. Barnabas, Clara Maass, and Babies hospitals, and the Eye and Ear Infirmary; served on the staff of the Martland Medical Center; senior surgeon in the department of head and neck surgery at Presbyterian Hospital, where he died Sept. 1, aged 71, of infectious hepatitis.

Bunnell, Sterling ⊕ San Francisco; born in San Francisco June 17, 1882; Medical Department of the University of California, San Francisco, 1908; specialist certified by the American Board of Surgery and the American Board of Plastic Surgery; past-president of the American Society for Surgery of the Hand; member of the American Surgical Association, American Association of Plastic Surgeons, American Association for the Surgery of Trauma, and the American Society of Plastic and Reconstructive Surgery; veteran of World War I; served as a consultant in hand surgery to the surgeon general, U. S. Army and to the U. S. Navy; and won the Army's highest civilian award, the Medal of Merit, for work that enabled thousands of soldiers to regain the use of their maimed hands; during World War II and the Korean War served at numerous Army hospitals as instructor and surgeon in reconstruction of the hand; awarded the Legion of Honor Medal by France in 1951; associated with Stanford University and St. Francis Memorial hospitals; died Aug. 20, aged 75, of heart disease.

Kleinberg, Samuel ⊕ New York City; born in 1885; Columbia University College of Physicians and Surgeons, New York City, 1908; specialist certified by the American Board of Orthopaedic Surgery; member of the American Orthopaedic Association and the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons; served as chief of the orthopedic service of Israel Zion Hospital in Brooklyn, on the staffs of the Lebanon Hospital and the Hospital for Joint Diseases, where he was past-president of the medical board, Hospital for Ruptured and Crippled (now the Hospital for Special Surgery) the Rockaway Beach (N. Y.) Hospital, and Israel Orphan Asylum; founder and editor in chief of the *Bulletin of the Hospital for Joint Diseases*; died in the Doctors Hospital Sept. 6, aged 71.

Lemoine, Albert Napoleon Sr. ⊕ Kansas City, Mo.; born in Concordia, Kan., Oct. 18, 1884; University of Kansas School of Medicine, Kansas City, Kan., 1915; specialist certified by the American Board of Ophthalmology; veteran of World War I; member of the American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society, and the Association for Research in Ophthalmology; fellow of the American College of Surgeons; past-president of the Kansas City Society of Ophthalmology and Otolaryngology and the Jackson County Medical Society; served on the staffs of the Menorah Medical Center, Research, St. Joseph, Children's Mercy, and Kansas City General hospitals; died in the University of Kansas Medical Center, Kansas City, Kan., Aug. 30, aged 72, of acute myocardial infarction.

Eblen, James Gilbert ⊕ Knoxville, Tenn.; born in Lenoir City Oct. 25, 1906; University of Tennessee College of Medicine, Memphis, 1930; specialist certified by the American Board of Pediatrics; vet-

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⊕ Indicates Member of the American Medical Association.

eran of World War II; member of the American Academy of Pediatrics; president of the Knoxville Academy of Medicine; past-president of the Tennessee Pediatrics Society; a director of the Knoxville Mental Health Center, which he helped to found and for which he served as president; served on the staffs of St. Mary's Memorial Hospital, Fort Sanders Presbyterian Hospital, and the Knoxville General Hospital; died in the C. J. Harris Community Hospital, Sylva, N. C., Aug. 24, aged 50.

Humbert, Walter Cowden ⊕ Greenville, N. C.; born in Grove City, Pa., April 11, 1907; Vanderbilt University School of Medicine, Nashville, Tenn., 1936; specialist certified by the American Board of Preventive Medicine; fellow of the American Public Health Association; veteran of World War II; formerly associated with the American Red Cross as director of Red Cross blood banks in the middle western area with headquarters in St. Louis; served as director of the Unicoi County health unit and as director of Giles and Lincoln counties, all in Tennessee; director of public health for Pitt County; died in the Pitt County Memorial Hospital Aug. 22, aged 50.

Harper, William Glen ⊕ Elkins, W. Va.; born in Elkins Oct. 4, 1887; College of Physicians and Surgeons, Baltimore, 1910; member of the American Academy of General Practice; veteran of World War I; served a term as president of the board of education; past-president and for several years treasurer of the Barbour–Randolph–Tucker Counties Medical Society; served as a member of the council of the West Virginia State Medical Association; recently named "General Practitioner of the Year"; on the staff of the Davis Memorial Hospital; died Aug. 27, aged 69, of ruptured aneurysm of the abdominal aorta.

Hoke, Clarence Calvin, Tulsa, Okla., born in Emmitsburg, Md., Sept. 25, 1885; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1914; an associate member of the American Medical Association; fellow of the American College of Surgeons; veteran of World War I; for two years a fellow in surgery at the Mayo Clinic in Rochester, Minn.; associated with Hillcrest Medical Center and St. John's Hospital, where in 1927 he was president of the staff; died in the Veterans Administration Center in Wadsworth, Kan., Aug. 11, aged 71, of hypertension and heart failure.

Ostrom, Louis ⊕ Rock Island, Ill.; born in 1874; Missouri Medical College, St. Louis, 1899; past-president of the Rock Island County Medical Society; veteran of World War I; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Laryngological, Rhinological and Otological Society; fellow of the American College of Surgeons; associated with the Rock Island County Tuberculosis Sanatorium; on the staffs of Moline Public and Lutheran hospitals, in Moline, and St. Anthony's Hospital, where he died Aug. 20, aged 83.

Coyle, Joseph Aquinas, Dublin, Ga.; University of Pittsburgh School of Medicine, 1921; service member of the American Medical Association; specialist certified by the American Board of Orthopaedic Surgery; member of the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons; veteran of World War I; for many years chief, orthopedic section, Veterans Administration Hospital, where he died Aug. 15, aged 61, of encephalomalacia.

Geibel, Frank Baum Clayton ⊕ Columbia, S. C.; Jefferson Medical College of Philadelphia, 1933; specialist certified by the American Board of Obstetrics and Gynecology; past-president of the South Carolina Obstetrics and Gynecology Society; veteran of World War II; consultant in obstetrics, South Carolina Sanatorium in State Park; associated with Providence Hospital and the Columbia Hospital, where he died Aug. 24, aged 51, of myocardial infarction.

Horst, Walter William ⊕ Wilmington, Calif.; Washington University School of Medicine, St. Louis, 1913; since 1928 police surgeon; veteran of World War I; for many years practiced in Globe, Ariz., where he was city health officer; served overseas during World War I; since 1928 police surgeon; for many years associated with the Seaside Memorial Hospital in Long Beach, where he was a senior honorary staff member, and where he died Aug. 15, aged 69, of cerebral thrombosis.

Baker, John Walter, Lieut. Commander, U. S. Navy, retired, Cape Neddick, Maine; Harvard Medical School, Boston, 1881; commissioned in the U. S. Navy in 1882; veteran of the Spanish–American War; retired Nov. 5, 1897; died in the U. S. Naval Hospital, Portsmouth, N. H., Aug. 7, aged 96, of intestinal obstruction due to incarcerated left inguinal hernia and arteriosclerotic heart disease.

Barnhill, John Robert ⊕ Riverbank, Calif.; University of Kansas School of Medicine, Kansas City, Kan., 1940; interned at General Hospital of Fresno County in Fresno, Calif.; served as city councilman; veteran of World War II; on the staff of the Oakdale (Calif.) Municipal Hospital; died in the Modesto (Calif.) City Hospital Aug. 27, aged 42, of chest injuries received in an automobile accident.

Brannan, Dorsey ⊕ Morgantown, W. Va.; Johns Hopkins University School of Medicine, Baltimore, 1921; specialist certified by the American Board of Surgery; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; vice-president of the Monongalia County Medical Society; veteran of World War II; associated with Monongalia General and Vincent Pallotti hospitals; died Aug. 31, aged 63, of coronary thrombosis.

Burnett, Peter W., Rocky Mount, N. C.; Leonard Medical School, Raleigh, 1906; died in the Park View Hospital July 1, aged 81, of leiomyosarcoma.

Buterbaugh, Howard Barbor ⊕ Indiana, Pa.; Western Reserve University Medical Department, Cleveland, 1895; fellow of the American College of Surgeons; veteran of World War I; a director and vice-president of the First National Bank; a member of the Pennsylvania State Chamber of Commerce; on the staff of the Indiana Hospital, where he died Aug. 6, aged 86, of aneurysm of the abdominal aorta.

Carter, Arthur Thompson, Cassadaga, N. Y.; University of Wooster Medical Department, Cleveland, 1908; member of the Medical Society of the State of New York; on the staff of the Brooks Memorial Hospital in Dunkirk; died Aug. 10, aged 74.

Conrad, Clyde Kenneth, New York City; University of Illinois College of Medicine, Chicago, 1925; veteran of World Wars I and II; died in Governors Island, N. Y., Aug. 21, aged 60.

Cousins, James S., Jonesboro, Ga.; Atlanta Medical College, 1894; died June 13, aged 86, of coronary occlusion and arteriosclerosis.

Curry, Lewis Allison, Topeka, Kan.; Rush Medical College, Chicago, 1922; member of the American Academy of General Practice, Kansas Medical Society, and the Central Association of Obstetricians and Gynecologists; veteran of World War I; died in St. Francis Hospital Aug. 11, aged 63, of essential hypertension.

Dalpe, William Guy ⊕ Los Angeles; McGill University Faculty of Medicine, Montreal, Que., Canada, 1914; veteran of World War I; served on the staff of the Los Angeles County Hospital; died in the Good Samaritan Hospital Aug. 8, aged 67, of cerebral thrombosis.

Deaver, Clyde Wilson ⊕ Birmingham, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1917; member of the American Academy of General Practice and the Southern Medical Association; president-elect of the Jefferson County Chapter of the Alabama Academy of General Practice; served overseas during World War I; died Aug. 12, aged 65, of acute myocardial infarction.

Drake, A. H. Boyer ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1923; veteran of World War II; on the staffs of St. Christopher's and Frankford hospitals; died in the Jeanes Hospital Aug. 7, aged 57, of gastric hemorrhage, acute peptic ulcer, and carcinoma of the colon.

Ellenberg, Samuel Lawrence ⊕ New York City; Columbia University College of Physicians and Surgeons, New York City, 1929; specialist certified by the American Board of Pediatrics; fellow of the American College of Physicians; affiliated with Lincoln, Manhattan General, and St. Clare's hospitals, and the French Hospital, where he died Aug. 23, aged 53, of cerebral hemorrhage.

Foster, Wayne John ⊕ Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1947; served in the medical corps of the U. S. Naval Reserve; on the staffs of St. Luke's and Mercy hospitals; died Aug. 3, aged 34.

Gentles, Henry Wernicke ⊕ Chicago; University of Glasgow Medical Faculty, Scotland, 1889; on the staffs of St. Luke's Hospital and Illinois Central Hospital, where he died Aug. 23, aged 90, as the result of a fall.

Gibson, Edwin Fred, Norwich, N. Y.; Cornell University Medical College, New York City, 1910; an associate member of the American Medical Association; veteran of World War I; served as county physician of Chenango County, health officer of the city of Norwich and school physician of Norwich; on the staff of Chenango Memorial Hospital; died in the Veterans Administration Hospital, Syracuse, Aug. 20, aged 71, of cerebral thrombosis.

Giles, Raymond Larkin ⊕ Littleton, N. H.; Dartmouth Medical School, Hanover, 1908; died Aug. 3, aged 75.

Grant, Leon Joseph, Brooklyn; Long Island College Hospital, Brooklyn, 1915; veteran of World War I; died Aug. 4, aged 66, of cerebral hemorrhage, myocarditis, and arteriosclerosis.

Gray, Gordon Robert, Johnstown, N. Y.; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1933; served as assistant epidemiologist with headquarters at Amsterdam; formerly district health officer of the state department of health with offices in Batavia; state health officer of the Johnstown District; died in the Roswell Park Memorial Institute, Buffalo, Aug. 29, aged 49.

Green, Dwight Munro, Vista, Calif.; Rush Medical College, Chicago, 1904; formerly on the faculty of College of Medical Evangelists, Loma Linda and Los Angeles; veteran of World Wars I and II; died Aug. 8, aged 78, of coronary occlusion.

Grodin, Herman Wolmer, New Haven, Conn.; Yale University School of Medicine, New Haven, 1917; member of the Connecticut State Medical Society; compensation physician for the state; served on the staff of the Hospital of St. Raphael; died Aug. 11, aged 65, of arteriosclerotic and hypertensive heart disease.

Guilbert, Gerald Didra ⊕ St. Paul; University of Minnesota Medical School, Minneapolis, 1927; member of the American Trudeau Society; served on the staffs of various Veterans Administration hospitals; on the staff of the Veterans Administration Hospital in Fort Snelling; died in Fairview Hospital, Minneapolis, Aug. 23, aged 61.

Haberman, Charles P. ⊕ Weissport, Pa.; Medico-Chirurgical College of Philadelphia, 1911; died Aug. 13, aged 79, of coronary occlusion.

Hale, Benjamin Franklin, Spur, Texas; Barnes Medical College, St. Louis, 1909; on the staff of the Spur Memorial Hospital; died Aug. 12, aged 76, of carcinoma of the bladder.

Hancock, Forrest Dunlap, Sulphur, Ky.; Hospital College of Medicine, Louisville, 1898; died in St. Anthony's Hospital, Louisville, July 22, aged 82, of cerebral hemorrhage.

Heald, Charles Wesley ⊕ Battle Creek, Mich.; American Medical Missionary College, Battle Creek, Mich., and Chicago, 1906; for many years associated with the Battle Creek Sanitarium; died Aug. 6, aged 81, of coronary artery disease.

Higgins, Spencer Littlefield, Captain, U. S. N., retired, San Diego, Calif.; Columbia University College of Physicians and Surgeons, New York City, 1903; service member of the American Medical Association; from 1935 to 1937 commanding officer of the U. S. Naval Hospital in Guam; entered the U. S. Navy in 1906 and retired Dec. 1, 1940; died in the U. S. Naval Hospital Aug. 7, aged 80, of cancer.

Hill, Joshua Moses, Chicago; New York Homeopathic Medical College and Flower Hospital, New York City, 1921; died in the North Shore Health Resort in Winnetka, Ill., June 24, aged 76, of cerebral thrombosis, arteriosclerosis, and diabetes mellitus.

Holland, Lewis Benedict, Wichita Falls, Texas; Baylor University College of Medicine, Dallas, 1923; veteran of World War I; past-president of the Wichita County Medical Society and past vice-president of the Texas Medical Association; died Aug. 24, aged 62, of acute coronary occlusion and arteriosclerosis.

Hopkins, Porter W. ⊕ Enid, Okla.; Hospital College of Medicine, Louisville, Ky., 1907; past-president of the Garfield-Kingfisher County Medical Society; veteran of World War I; died Aug. 14, aged 77, of cancer.

Houghton, Guy Swinburne, Canajoharie, N. Y.; Columbia University College of Physicians and Surgeons, New York City, 1913; member of the Medical Society of the State of New York; on the staffs of the St. Mary's Hospital and Amsterdam City Hospital in Amsterdam, where he died Aug. 18, aged 71, of acute myocardial infarction.

Hughes, Orlando Greeley, Chattanooga, Tenn.; Medical Department of Grant University, Chattanooga, 1899; died Aug. 21, aged 85.

Jaques, Jennie Eugenia ⊕ Jersey City, N. J.; Woman's Medical College of Baltimore, 1897; for many years member of the board of education; died in the Christ Hospital Aug. 10, aged 85, of cerebral hemorrhage and right hemiplegia.

Jenson, James Lloyd ⊕ Colby, Kan.; Jefferson Medical College of Philadelphia, 1912; member of the American Society of Anesthesiologists; veteran of World War I; served as county health officer; on the staff of St. Thomas Hospital; died in St. Joseph's Hospital, Denver, Aug. 13, aged 71, of coronary occlusion.

Kay, Edward Walter, Detroit; Chicago College of Medicine and Surgery, 1916; died in the Grace Hospital Aug. 10, aged 67, of chronic nephritis.

Kistler, Edwin Cloyd, Blain, Pa.; University of Vermont College of Medicine, Burlington, 1904; on the staff of the Carlisle (Pa.) Hospital; died Aug. 19, aged 80, of coronary thrombosis.

Knisely, Alan De Grief ⊕ Lima, Ohio; Kentucky University Medical Department, Louisville, 1906; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Laryngological, Rhinological and Otological Society; on the staff of St. Rita's Hospital; died in Toledo Aug. 31, aged 76, of arteriosclerosis.

Kronick, Macey, Rutland, Mass.; University and Bellevue Hospital Medical College, New York City, 1934; member of the Massachusetts Medical Society; formerly on the staffs of the Greenfield (Mass.) Hospital and the Westfield (Mass.) State Sanatorium; on the staff of the Rutland (Mass.) State Sanatorium, where he died Aug. 24, aged 47, of pulmonary tuberculosis.

Lazansky, Joseph Peter ⊕ Birmingham, Ala.; Deutsche Universität Medizinische Fakultät, Prague, Czechoslovakia, 1923; also a dentist; formerly on the staff of Tufts College Medical School, Boston; died July 27, aged 58, of acute myocardial infarction.

Leavell, George Walne ⊕ Bristol, Va.; University of Louisville (Ky.) Medical Department, 1911; for many years a medical missionary in China; affiliated with Bristol Memorial Hospital, where he died Aug. 12, aged 75, of arteriosclerotic heart disease.

Lipson, Jerome ⊕ Washingtonville, N. Y.; Regia Università di Pisa Facoltà di Medicina e Chirurgia, Italy, 1937; veteran of World War II; died Aug. 11, aged 50, of coronary thrombosis and arteriosclerosis.

Lisbon, Wallace, Providence, R. I.; Cornell University Medical College, New York City, 1927; certified by the National Board of Medical Examiners; formerly practiced in New York City; served on the staff Rogers Williams General Hospital and consultant in urology at Charles V. Chapin Hospital; died Aug. 18, aged 55, of hepatitis.

Long, Charles Eugene, Socorro, N. M.; University of Colorado School of Medicine, Denver, 1943; member of the New Mexico Medical Society and the American Academy of General Practice; veteran of World War II; died Aug. 21, aged 53, of coronary artery disease.

McCullough, George Edwards ⊕ Troy, Ohio; Medical College of Ohio, Cincinnati, 1899; fellow of the American College of Surgeons; past-president of the Miami County Medical Society; for many years member and at one time president of the school board; served on the staff of the Stouder Memorial Hospital, where he died Aug. 13, aged 84.

McKnight, Chester Howard ⊕ Brinkley, Ark.; Vanderbilt University School of Medicine, Nashville, Tenn., 1907; past-president of the Arkansas State Board of Health; in 1948 named "Man of the Year at Brinkley"; on the staff of the Mercy Hospital, where he died Aug. 12, aged 72, of uremia.

McNair, Charles Francis ⊕ Hutchinson, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1905; veteran of World War I; on the staff of St. Elizabeth's Hospital and the Grace Hospital, where he died Aug. 9, aged 79, of hypertrophy of the prostate.

Meyer, Louis A. T., Jefferson City, Mo.; St. Louis University School of Medicine, 1905; served as county coroner; died in St. Mary's Hospital Aug. 14, aged 78.

Mitchell, Carl Randolph, Colonel, U. S. Army, retired. Pacific Palisades, Calif.; Rush Medical College, Chicago, 1915; certified by the National Board of Medical Examiners; service member of the American Medical Association; veteran of World Wars I and II; retired July 31, 1947; died in St. John's Hospital, Santa Monica Aug. 9, aged 65, of dissecting aortic aneurysm.

Morgan, Hiram Burnard ⊕ Ware Shoals, S. C.; Medical College of South Carolina, Charleston, 1934; member of the American College of Chest Physicians and the American Trudeau Society; served as president of the South Carolina Trudeau Society; past-president of the medical staff, Self Memorial Hospital, Greenwood; died Aug. 15, aged 51.

Morse, Charles H. ⊕ Eagle Grove, Iowa; State University of Iowa College of Medicine, Iowa City, 1881; died in Fort Dodge Aug. 15, aged 101, of uremia and tumor of the bladder.

Nagle, Frank Orthmer, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1907; professor emeritus of ophthalmology at his alma mater; served on the staffs of St. Luke's and Children's Medical Center in Philadelphia, J. Lewis Crozer Hospital in Chester, Pa., and the William McKinley Memorial Hospital in Trenton, N. J.; died Sept. 9, aged 73.

Nelson, Henry John ⊕ Pasadena, Texas; University of Oklahoma School of Medicine, Oklahoma City, 1930; died in the Methodist Hospital, Houston, July 19, aged 59, of carcinoma of the pancreas.

Niebergall, Mary Raymond Gould ⊕ St. Francisville, La.; Tulane University School of Medicine, New Orleans, 1923; died in the Field Memorial Community Hospital, Centreville, Miss., June 11, aged 62, of bronchogenic carcinoma.

Noble, Lyman Adams, East Cleveland, Ohio; Cleveland Homeopathic Medical College, 1903; died in West Springfield June 9, aged 79.

Olson, Olof Adolphus, Weimar, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; formerly a medical missionary in Africa; a member of the medical staff of the Weimar Joint Sanatorium; died in the Mercy Hospital Aug. 20, aged 75, of arteriosclerotic heart disease.

Orff, John Henry, Shillington, Pa.; Baltimore Medical College, 1904; an associate member of the American Medical Association; died in Copenhagen, Denmark Aug. 28, aged 74, of coronary occlusion.

Pachanian, Sumpat Kevork ⊕ Worcester, Mass.; Yale University School of Medicine, New Haven, 1908; died in the Worcester City Hospital Aug. 30, aged 79, of adenocarcinoma of the stomach with metastases to left lung and myocardium.

Panter, Samuel Goodall, Hebron, Neb.; Northwestern University Medical School, Chicago, 1909; died July 25, aged 73, of lymphatic leukemia.

Patterson, Malcolm Richard ⊕ Cleveland, Ohio; Meharry Medical College, Nashville, Tenn., 1951; veteran of World War II; died in the Cleveland Clinic Hospital Aug. 19, aged 44, of scleroderma and bronchogenic carcinoma.

Pawley, Sigmund Bernard ⊕ Wilmington, Del.; Jefferson Medical College of Philadelphia, 1917; member of the American Academy of General Practice;

COLOMBIA

Streptomycin-Resistant Mycobacterium Tuberculosis.—Almanzar and co-workers stated (*Trabajos cientificos del hospital sanatorio San Carlos*) that the use of streptomycin has not been adequate. No major consideration has been given to the possibility that streptomycin-resistant strains may appear, complicating the patient's response to therapy as well as giving rise to a public health problem if these organisms are transmitted to contacts of such a patient. The author collected sputum from 399 patients with positive cultures. The specimens were homogenized with a 3% solution of sodium hydroxide, shaken mechanically for 10 minutes, incubated for one hour at 37 C, and centrifuged. The supernatant fluid was decanted and the sediment neutralized. After further centrifugation the sediment was resuspended in a small volume of saline solution, which was distributed in equal parts in five culture tubes—a control tube and four tubes with 3, 10, 50, and 100 mcg., respectively, of streptomycin per cubic centimeter of medium (final concentration). The inoculated tubes were incubated at 37 C for 35 to 60 days. If the number of colonies was practically the same in both inoculated tube and its control, the bacterium was considered resistant to that specific dose. The organism was considered sensitive when the number of colonies was much greater in the control tube.

Of the 399 patients, 151 had had no antibiotic treatment; 13 of these were resistant to 3 mcg., which was not thought to be significant for future treatments; and 5 showed significant resistances (2 of them to 10 mcg. and 3 to 100 mcg.). Sensitive streptomycin cultures were grown from 208 specimens and cultures with some resistance (between 3 and 100 mcg.) from 131. In other words, cultures from more than a third of the patients had at least a beginning resistance to the drug. In the streptomycin-sensitive culture group, 133 (64%) were untreated patients and 75 (36%) were treated with streptomycin alone or in combination with isoniazid but without aminosalicylic acid. Of these, 33 (43%) had been treated with 40 Gm. or less of streptomycin, 23 (31%) with 41 to 80 Gm., 6 (9%) with 81 to 100 Gm., and 13 (17%) with more than 100 Gm. In 113 patients with resistant cultures already treated with streptomycin, the degree of resistance with reference to the quantity of streptomycin received was tabulated. In those who had received 40 Gm. of streptomycin or less, 38% had cultures showing resistance to 3 mcg. and 33% resistance to 100 mcg. In those who had received 41 to 80 Gm., 44% had cultures showing resistance to 10 mcg. and 28% resistance to 100 mcg. In those who had received 81 to 100 Gm., 44% had cultures showing resistance to 10 mcg. and 31% resistance to 100 mcg. In those who had received over 100 Gm., 40% had cultures showing resistance to 100 mcg. and 26% resistance to 10 mcg. In the cultures of 8.6% of previously untreated patients, who had possibly been infected by patients undergoing treatment, there was a certain degree of resistance to 3 mg. of streptomycin. Strains of the organism resistant to 10 and 100 mcg. were found in 3.3% of tuberculosis patients. This percentage may be much higher if no measures are taken to limit treatment with streptomycin to definite indications. The authors concluded that drug resistance should be determined routinely before and during streptomycin treatments in all patients.

Electroencephalography in Syphilitic Encephalitis.—At the third Latin American Congress of Electroencephalography held in July at Medellin, Calderón-Vargas reported on the electroencephalographic findings in five men with syphilitic encephalitis. Two with progressive syphilitic encephalitis had a definitely altered electroencephalogram directly related to spinal fluid, neurological, and mental changes. One of these showed lateralized and focal changes forming an epileptogenic focus in the electroencephalogram. This was considered to be a result of biological recovery and normalization of other areas. Two other patients, after treatment, also showed normal electroencephalograms corresponding to an inactive stage of encephalitis. The last patient was clinically and neurologically a general paretic. His electroencephalogram was negative, except for lack of blocking reaction. This was also thought to represent an inactive stage of encephalitis. From this data, the speaker concluded that electroencephalography is a valuable diagnostic aid in syphilitic meningoencephalitis. It indicates the stage of the disease, serves as an auxiliary method for medical control, and has prognostic value in patients in whom the syphilitic process is localized.

DENMARK

A Morbidity Census in General Practice.—A group of seven general practitioners in Odense undertook a year's census of their clientele between Sept. 1, 1949, and Aug. 31, 1950. Only the patients coming under health insurance and reported as sick during the year under review were included in this census. The findings by Dr. N. S. Jacobsen, published in *Ugeskrift for læger* for Aug. 29, concern the 1,833 sick-reports of 1,544 patients from a clientele of 12,189 persons over the age of 15 years. Women reported sick more frequently than men, but the duration of illness was not longer for the former than for the latter. Persons with fixed salaries had shorter sickness periods than those paid by the hour. Patients living in substandard houses made up about

10% of the total clientele and accounted for 16% of the sick-reports. Acute respiratory infections showed the highest incidence and were the second greatest cause of time lost from work. Rheumatism was the greatest cause of such loss and showed the second greatest incidence. Accidents represented 15% of the total time lost from work. There were 328 patients suffering from neuroses, which in 75 were associated with sickness lasting longer than 60 days. Women outnumbered men in this category, and in 75 patients the neurosis was associated with pregnancy and childbirth.

Contamination of Transfusion Blood.—In 1956, an article by McEntegart in the *Lancet* on bacterial contamination of blood for transfusion prompted the staff of the blood bank and central laboratory of the Aalborg City Hospital to test its blood bank on this score. Reporting on these tests, Bang and Paaby (*Nordisk medicin*, Aug. 22, 1957) noted that two specially trained nurses drew the blood after cleaning the skin with alcohol. A new set of needles and tubing was used for each donor. The 101 samples examined bacteriologically included 11 found to be contaminated. In three of these the contamination was such that numerous bacteria were demonstrable on the direct microscopic examination of a smear. In the remaining eight, culture in serum broth was necessary for the discovery of the organisms. Most of the 90 sterile samples had been stored for less than 15 days, the mean duration of storage being 9.85 days. Most of the 11 contaminated samples has been stored for more than 15 days, and the mean duration of storage was 17.28 days. The three most heavily contaminated specimens had been stored for an average of 19.66 days. A scrutiny of the clinical records of the recipients of the contaminated blood failed to incriminate it definitely as the cause of such reactions as chills, pain in the loins, urticaria, or shock, but the issue was obscured by ailments inherent in the state of affairs calling for blood transfusion. After listing all the bacteria found and noting that they consisted mostly of various gram-positive cocci, with nonhemolytic streptococci in one case, Bang and Paaby concluded that, in the future, blood should not be used for transfusion after a storage period of 14 days and that tincture of iodine should replace alcohol for the disinfection of skin and bottle stoppers.

FRANCE

Tobacco and Cancer of the Bladder.—Denoix and Schwartz (*Bulletin of the French Society for the Study of Cancer*, Dec., 1956) studied the relationship between cancer of the urinary bladder and smoking; 60 men suffering from cancer of the bladder were compared to 60 noncancerous patients, 60 patients with cancer of the lungs, and 60 healthy subjects. They found the highest proportion of people smoking cigarettes, most of whom inhaled smoke, among those with cancer of the bladder. The reason for this correlation requires further study.

Dupuytren's Contracture.—At the meeting of the French League Against Rheumatism in February, Prof. S. de Sèze and Mme. Debeyre presented the results of the treatment of 70 patients with first, second, and third degree contractures with local injections of hydrocortisone. It is injected into the nodules and palmar fascia. Treatment must be prolonged and supplemented by vigorous traction on the infiltrated phalanges to break up adhesions. In the 31 patients with first degree contractures, the disease was cured or improved, and in the 39 with second and third degree contractures, 17 had excellent results, 18 were improved, and in 4 there was no improvement.

Puncture of the Vertebral Body.—At the same meeting, de Sèze and co-workers described a new technique for getting a biopsy specimen from the vertebral body. After the use of local anesthesia, a guide needle is inserted, and after radiography a trocar is introduced. With a rotary motion of a biopsy needle that has small cutting teeth, a bony cylinder is removed. The authors performed 16 such punctures between the eighth thoracic and fifth lumbar vertebrae without any untoward reactions. Examination of the specimens thus obtained enabled them to diagnose two tumors, four metastases, three osteoporoses, one spondylitis, and four plasmocytoses.

Diaphragmatic Paralyses.—P. Giraud and co-workers (*Archives françaises de pédiatrie*, no. 2, 1957) reported on five patients with persistent diaphragmatic paralyses due to ganglionic compression of the phrenic nerve. The patients complained of pains along the course of the phrenic nerve, digestive disorders, and dyspnea on exertion. Roentgenograms revealed elevation of the hypotonic diaphragm, displacement of the heart to the right, especially on inspiration; and paradoxical movement of the diaphragm.

Attempts to Induce Mutations.—At a meeting of the Academy of Science in April, J. Benoit and co-workers described their studies on bacteria which showed the importance of desoxyribonucleic acids (DNA) in the constitution of genes and the possibility of modifying hereditary characteristics through the use of a DNA coming from another bacterial race. The authors have performed similar experiments with birds that showed that after introducing the DNA of a stable race such as the khaki duck into subjects of another race (the Pekin duck in this instance), important somatic modifications are produced. The structural hereditary characteristics of the duck, its height, and special features may after birth show the influence of the extraneous DNA. The new types breed true showing that they are somatic mutants.

Cancer Caused by Lesion of Sympathetic Nervous System.—At the May meeting of the Academy of Science, Coujard and Chevrau stated that some lesions of the peripheral sympathetic nervous system cause localized disorders of growth in different tissues. For instance, in the skeletal system, the abnormal proliferations may cause osteochondromatous tumors which may metastasize. They concluded that the disturbance of the normal process of regulation of the growth of the tissues may be sufficient to liberate some groups of cells from the general regulative influence and thus result in cancer.

INDIA

Chrome Dermatitis.—Lead chromate and related substances are extensively used in various industries, particularly in tanning. Chromic acids and chromates are know to be powerful skin irritants. K. D. Lahiri (*Indian Medical Forum*, August, 1957) reported a series of 36 patients with contact dermatitis due to chrome. Twelve of these came from the leather industry, 10 from the chromium plating industry, 8 were laboratory workers who had to clean glass slides and test tubes with a dichromate solution, 4 handled cement, and 2 used khaki garments. The most common sites affected were the hands and the feet, but various other parts of the body were involved in some patients. Chrome dermatitis is resistant to treatment, tends to become chronic, and may continue long after contact with chromates has been eliminated. In the management of these patients, scrupulous hygiene and knowledge, by the worker, of the danger of developing the dermatitis are important as prophylactic measures.

Tuberculin Sensitivity in Sick Children.—D. N. Chatterjee (*J. Indian M. A.* 29:5 [Sept. 1] 1957) found the tuberculin test of great practical value in diagnosis of sick children. In many cases a positive reaction is the only reliable method of detecting unsuspected tuberculosis, and a negative reaction, provided the test was properly carried out, weighs heavily against a diagnosis of tuberculosis. The incidence of active disease among positive reactors varies with age and differs in different regions, depending on the prevalence of poverty, malnutrition, and repeated attacks of acute infectious diseases in overcrowded and unhygienic surroundings. To determine the significance of a positive tuberculin reaction in a child, therefore, the tuberculin status of different age groups in that particular locality must be estimated from time to time. Some patients diagnosed as having marasmus were found at autopsy to have miliary tuberculosis. The tuberculin test was started on patients so diagnosed so as not to overlook the possibility of tuberculosis, was later extended to other patients, and has been done routinely on all those admitted to the Children's Hospital since 1949.

The present paper is based on the results of the tuberculin test in 1,882 children. Those who gave a positive reaction on any previous occasion and those who had received BCG vaccine were excluded from this study. Tuberculin injections of varying strengths were given every fourth day on alternate forearms and the readings taken 48 to 72 hours after the injection. Only a definite induration persisting after 72 hours with at least one diameter of 6 mm. or more was considered positive. To determine the presence of active infection among positive reactors, roentgenograms, attempts to isolate tubercle bacilli, histological examination of lymph nodes, sedimentation rates, therapeutic tests with antituberculosis drugs, and, in some, autopsy were used. The percentage of positive reactors increased steadily starting with the age group 0 to 2 years and reaching a maximum of 50% in the age group 10 to 12 years. In any age group under 12 years, the percentage of children with tuberculosis is roughly about double that reported in England. Regarding the percentage of active disease among the positive reactors, the highest figure (97.87%) was seen in the lowest age group. It then showed a steady decline to a minimum in the age group 8 to 10 years, after which there was an increase in the age group 10 to 12 years. More than 80% of all positive reactors under the age of 7 showed active disease, while after 7, although the percentage of positive reactors was still high, the percentage with active disease was only about 30.

Training Nurses in Public Health.—A scheme for the integration of public health in the basic course of nursing was inaugurated by the State Health Minister of Madras in July. The primary aim of the scheme is to train all nurses not only in sick nursing at as present but also in public health nursing. The center at Stanley Medical College, Madras, the first such center in Madras, is 1 of 10 in the country chosen under a pilot scheme framed for the purpose by the government of India. The government of Madras has sanctioned the opening of 84 rural family planning centers in the state and appealed to the nurses to come forward and take charge of them.

NORWAY

Hairdressing Salons.—Oslo has 349 hairdressing salons for women and 219 barber shops for men. To find out how they are run from the point of view of hygiene, 120 of them were visited without previous notice by sanitary inspectors in January and February, 1956. The report by Wöien and Weisert (*Nordisk hygienisk tidskrift*, no. 5 and 6, 1957) gives some support for their quotation from Mark Twain to the effect that everything changes except the barber whose behavior and circumstances are immutable. The inspectors used a system of scoring with a maximum score of 20 points and a minimum of 12 for a verdict of "satisfactory." Only 10 establishments had a floor area of less than 7.5 sq. m. per hairdresser, and in 73% the sanitation was satisfactory in terms of maintenance, cleanliness, order, and general impression. The women hairdressers were, on the average, younger than the men, and while only 15% of the men were between the ages of 15 and 29, this was the age of 43% of the women. While 14% of the men were over 60, this was the case with only 3.6% of the women. The women's shops received a better sanitary rating for the upkeep of the linen than those of the men. In 15 cases the solution supposed to disinfect combs proved to be water only, and the composition of the other solutions was greatly varied with regard to character, concentration, and age. Solutions supposed to contain chlorine did not smell of it, and solutions supposed to contain mercury bichloride were suspiciously colorless. A common practice was to transfer a comb from head to head with the hairdresser's pocket the only intermediate station. A perfunctory dip into a disinfectant was a token gesture to sanitation in some establishments. The large salons, employing four or more hairdressers, made a better score than the smaller. At Oslo's school for professional hairdressers, no attempt has been made to teach the elements of sanitation and bacteriology, the assumption being that such teaching must be given by the master hairdressers. Only about 12% of the salons inspected possessed three combs per hairdresser and a sterile disinfectant solution. The authors recommended the systematic teaching of sanitation at the school for hairdressers and better public health control of washing and disinfection of the hairdressers' tools.

Rising Leukemia Rate.—Since the establishment of the cancer register in Oslo under Dr. Einer Pedersen, facilities are provided for a more accurate estimate of the frequency of leukemia. The first three years of the register, 1952 through 1954, were reported on with regard to leukemia by Dr. Kirsten Arnesen (*Nordisk medicin*, Aug. 22, 1957). The number of new cases rose from 167 in 1952 to 241 in 1954. The 605 cases reported in these three years included 332 acute and 106 chronic cases, with 167 not classified as acute or chronic. These cases were also classified according to whether they were lymphocytic, granulocytic, or not specified, and the many cases in the last category bear witness to the difficulties in distinguishing between the various forms of leukemia. Arnesen admits that it is often just a matter of personal opinion when a given case is allotted to one group or another. The cancer register's material does not yet give any clue to certain occupations or social standing as likely to predispose to leukemia, but it does show that most of the patients are over 50. In the younger age groups there is no marked sex difference, but with rising age males become much more prone to the disease than females, and after 80 the rate per 100,000 inhabitants is 26.8 for men as compared with only 4.9 for women. It is only after the fourth decade that this sex difference becomes marked. Statistics going back to 1919 show a comparatively low leukemia rate, with only 0.83 male cases per 100,000 inhabitants per year in the period 1919 through 1921 as compared with 7 in the period 1952 through 1953 and a corresponding rise from 0.76 to 5.2 for female cases. Arnesen believes that more accurate diagnoses and various other factors have probably been responsible for much of this rise.

Premature Births.—*Nordisk medicin* for Aug. 29 contains an all Scandanavian symposium on premature births. Prof. Alfred Sundal of Bergen pointed out that babies weighing less than 2,500 Gm. (about 5.5 lb.) at birth constitute about 4.5% of all births and account for as much of the total infant mortality as the remaining 95.5%. In recent decades there has been a marked fall of the total infant mortality, but this has depended largely on the behavior of the infectious diseases acquired in the last 51 weeks of the first year of life. The mortality during the first week of life has fallen but slightly, and it is in this week that prematurity plays so important a part. In Bergen in 1955, the total infant mortality of 12.3 per 1,000 could be split up into its component parts so as to show a mortality of 157 per 1,000 for babies weighing under 2,500 Gm. and a mortality of 5.8 per 1,000 for those weighing more. In Bergen in the same year there were 34 stillbirths, and among these babies there were 16 weighing less than 2,500 Gm. Of the 15 babies dying during the first week of life, there were 11 who were premature. In defense of intraosseous blood transfusion, held in certain quarters to be painful and heroic, Sundal stated that the injection of so small a quantity as 5 to 10 ml. had never in his experience provoked cyanosis or a reaction indicative of pain.

The technique was comparatively easy, whereas several exploratory punctures might be needed in search for a vein in the head amenable to an intravenous injection.

SWEDEN

Ultrasonic Treatment.—In 1952, Dr. Olav Lindahl reviewed his experiences in using ultrasonic treatment for pain in the knees due to arthrosis or chondromalacia. The improvement achieved was no greater in the treated patients than in the controls. He has now (*Svenska läkartidningen*, Aug. 16, 1957) reported a series of 61 patients suffering from pain in the knees due to the above-mentioned ailments and 53 patients suffering from pain in the arms due to ailments other than tuberculosis or new growths and with the pain expressing itself in the axilla, often radiating from the neck, and always extending down the arms beyond the elbows. There was some limitation of the range of movement but not the stiffness of the type associated with humeroscapular periarthritis. In both groups various other methods of treatment had been tried. As in the earlier series, controls were used. In the group with knee involvement only 57% showed improvement under supersonic treatment, whereas 71% of the controls did so. On the other hand, 78% of those with arm involvement showed improvement under supersonic treatment, whereas only 18% of the controls did so. Lindahl does not attempt to explain this difference in response. In none of his patients did the treatment seem to do harm, and in spite of the misadventures reported by other observers, Lindahl says that ultrasonic treatment is one of the safest remedies employed in physical medicine, provided the necessary precautions are taken.

From Phthisiologist to Lung Specialist.—Because of the decreasing incidence of tuberculosis, young physicians hesitate to commit themselves to a specialty threatened by extinction in the near future. It is thus difficult to staff the remaining sanitoriums. Dr. Sven Löfgren states that the Swedish Sanatorium Physicians Association has recently changed its name to the Swedish Lung Physicians Association, and plans are being made for the replacement of hospitals for the tuberculous by hospitals catering not only to patients with tuberculosis but also to those with lung tumors, pneumomycosis, pneumoconiosis, sarcoidosis, bronchial asthma, chronic bronchitis, and pneumonia. Heart diseases may be included in this list. There is also a plan for the establishment of six hospitals devoted to thoracic surgery. Actually the tuberculosis problem is in no risk of extinction in the near future. Tuberculosis morbidity, as distinct from tuberculosis mortality, has shown little reduction.

Pseudocroup.—At the Flensburg childrens hospital in Malmö, Dr. Per Selander studied a series of 505 patients with pseudocroup treated in different ways. The incidence was greatest in those between 2 and 3 years old, and 64% were boys. The bacteriological findings were much the same as for other infections of the upper respiratory tract, with streptococci and micrococci being found in more or less pure culture or in various combinations. While there is much to suggest that the basal factor in pseudocroup is a virus, Selander suspects that the clinical findings may largely depend on the bacteria found in these patients. Between September, 1950, and February, 1954, he gave alternate patients penicillin and a sulfonamide; the others were given chloramphenicol. Between February, 1954, and December, 1956, alternate children were given penicillin and a sulfonamide, but the others received penicillin and streptomycin. The effects of these different methods of treatment were gauged in terms of mortality, frequency of tracheotomy, temperature, sedimentation rate, and duration of stay in hospital. Apart from the comparatively high cost of the treatment with chloramphenicol, there was no appreciable difference in the reactions to the different treatments given.

Leukemia.—*Nordisk medicin* for Aug. 22 contains a symposium on hematological subjects. Dr. Nils G. Nordenson draws attention to the apparent rise in the frequency of leukemia and the successes achieved by the cytostatic remedies used since 1949. These successes are still so limited that palliative treatment, both psychic and somatic, is just as important as specific treatment. By palliative treatment he means blood transfusion and the administration of antibiotics to combat various infections. In mature lymphocytic leukemia in the elderly, palliative treatment may prolong life by 20 or more years. Matters are less promising with the immature leukemias, for which the prognosis varies somewhat with the age of the patient, and are better with the young than with patients between 40 and 50. Without any treatment, 35% may still be alive after six months but only 5% after a year. The younger the patient, the longer and more frequent the remissions. Under specific treatment, 55% of child patients may expect to achieve a remission of the blood and bone marrow findings. In patients between 40 and 50 years of age, this is achieved by only 15%.

UNITED KINGDOM

Museum on Tour.—When the director of the Wellcome Museum of Medical Science visited the South African Medical Congress last month, he took with him the section of the museum devoted to schistosomiasis as well as a number of important pathological specimens. After the meeting he made a short tour of various medical teaching institutions in South Africa and Southern Rhodesia. If these demonstrations prove successful, the practice of reproducing part of the museum in overseas territories will be extended.

Vital Statistics.—The infant mortality rate in England and Wales in 1955 was 24.9 per 1,000 live births compared with 25.4 in 1954. The rate has fallen steadily over the last 10 years, the 1955 rate being 55% of the rate of 1945. About 60% of infant deaths occurred in the first week, and over half of these were in the first day. The stillbirth rate of 23.2 per 1,000 live and stillbirths was slightly lower than that for 1954 but has not varied greatly over the past few years. The maternal death rate in 1955 was the lowest on record—0.64 per 1,000 total births. The fall in the number of deaths from tuberculosis continued in 1955, dropping from 7,897 in 1954 to 6,492 in 1955. Deaths from respiratory tuberculosis were, for males, 47% and, for females, 32% of the number of such deaths in 1950. In that year 98 boys and 85 girls under 15 died from respiratory tuberculosis; in 1955 only 7 boys and 18 girls died. Deaths in 1955 from accidents and violence numbered 21,469 compared with an annual average of 19,636 for the years 1950 to 1954. Accidental and violent deaths as a percentage of deaths from all causes was, for all ages together, almost identical with that for 1954, but for ages under 35 the percentages increased for both sexes, reaching their highest level since the war years, 1941 to 1945. In the case of males under 15 and females aged 15 to 34, the percentage of accidental and violent deaths reached its highest level since records first began. Deaths due to traffic accidents increased by 8% over the 1954 figures. The most disquieting rise in the number of deaths from such accidents occurred in the age-group 15 to 24, particularly among males. The Greater London death rates from automobile accidents are among the lowest for ages under 65, but above this age they are among the highest.

Lactation and Heredity.—Genetic factors significantly contribute toward lactational failures, according to Wickes and Curwen (*Brit. M. J.* 2:381, 1957), who studied a series of 943 women, 43% of whom were primigravidas, attending antenatal clinics. Of 397 women whose mothers were said to be good breast-feeders, 60% succeeded in maintaining uncomplemented breast feeding for eight weeks, compared with 43% of 63 women whose mothers were not good breast-feeders.

Scottish Teaching Hospitals.—A committee to study the facilities for teaching medicine in Scotland and to suggest improvements has made its report (Report on Teaching Facilities and Students' Amenities in Scottish Hospitals, Royal College of Surgeons, Edinburgh, 1957). The committee stated that the teaching hospitals and medical school at Aberdeen are the most up to date and satisfactory in Scotland. These were built just before the war and are well equipped, although there is still lack of teaching rooms attached to the wards. At other teaching schools, which date back to the beginning of the last century, there is stated to be a shortage of cloakrooms, reading rooms, lecture rooms, and dining rooms. The lecture rooms are not up to modern standards and should include didactaphones, by means of which all the students can hear simultaneously the physical signs in the chest of a patient. A further criticism is that in outpatient departments there are not enough small rooms for teaching or for use as laboratories. The worst school is Dundee (University of St. Andrews), the buildings of which are the oldest and were not originally intended for teaching.

Nobody is directly responsible for making improvements in hospitals. The universities consider that it is the responsibility of the secretary of state, in accordance with the terms of the National Health Act. They have therefore refrained from asking for money from the University Grants Committee for building new medical schools or reequipping old ones. No special grant has been made, however, for medical education. A new agreement was made in June between the treasury, the health department, and the University Grants Committee for financing teaching and research in Scotland. The medical education committees have not functioned well, except in Aberdeen, where requests for money by the university were modest. Machinery is needed to bring about cooperation between the universities and boards of management of the hospitals.

Smoking Habits.—According to the *Daily Press* on Sept. 1, in spite of government propaganda on smoking and its relationship to lung cancer, there has been no reduction in the consumption of tobacco. There was, however, a change in smoking habits. It was estimated that at least 3 million smokers have changed from ordinary cigarettes to filter-tip varieties, and thousands more are smoking cheroots, pipes, and cigars. This shows that the public has taken some note of the facts published by the government but still adheres to a deep-rooted habit.

Slimming.—A further death from slimming was reported in the *Daily Press* on Sept. 3. A 20-year-old girl who had weighed over 160 lb. lost 36 lb. in four months but became a nervous and physical wreck. Insomnia developed, and the girl took an overdose of sleeping pills. Autopsy revealed that she also had severe liver damage which was consistent with taking dextro-amphetamine sulfate over several weeks, the damage being severe enough to have ultimately caused death had she not taken the sleeping pills.

Plastic Surgery and Fashion.—The *Daily Press* of Sept. 2 quotes a plastic surgeon as saying that at his London hospital the number of plastic reconstructions of the female breast doubled in the last 10 years. Most of the operations were for reduction in size of the breasts to conform with current fashions. A bust of the wrong dimensions can be a serious social, economic, and psychological disadvantage to a career woman and may adversely affect her whole adjustment to life. Such feelings should be offered relief by partial mastectomy. Many professional models have required this operation. The two main reasons for this increasing demand for surgery are the "growing cult of the bosom" among young girls and the fact that a number of models and other women depend on their figures for their livelihood. One girl requested a reduction operation to increase her chances of marriage. As for the husbands, they were usually satisfied with their wives as they were, but, apparently, if a wife wanted such an operation, the husband's opposition was usually overruled.

Hospital Staffing.—The Medical Practitioners' Union of the United Kingdom is a nonpolitical organization affiliated to the Trade Union Congress and has members drawn from all branches of the profession. It is not associated with the British Medical Association but has a harmonious relationship with it nevertheless, since each body has the interests of the medical profession as its function. One of the union's publications is the monthly *Medical World Newsletter*, which is sent free of charge to practitioners in the National Health Service. The hospital edition (September) points out that before the inception of the National Health Service the routine work of hospitals was performed by junior staff and residents on the basis of expectation of eventual promotion and reward. Today there is no certainty of promotion, and the eventual rewards are small in comparison to those of prewar days. Junior staff physicians have been singularly unsuccessful in attaining their rights due to absence of representation on any negotiating committee, which usually consists of established senior staff members who, although working in good faith, do not necessarily appreciate the real need and hardship of the junior staff.

One complaint of junior staff members is the unreasonable insecurity attached to a specialist career. Unsettling short-term appointments prove a great strain on family life, cause endless inconvenience and expense, and, coupled with poor prospects and chronic anxiety over financial matters, must reduce effort and efficiency of the individual. Also, of all graduate educations, the physician has the longest, the most exacting, and the most expensive; yet, on qualifying, he is paid the lowest hourly rate for the most responsible duties. On the whole, junior hospital staff members seem to have fared worst of all government employees. The plight of senior residents who have completed their scheduled four years of training without attaining a consultant post is also serious. These men have usually had about 15 years of training, and yet, in 1950, the government attitude was simply to "axe" the surplus senior residents, an approach that brought forth great indignation from many quarters. One solution has been a proposed new grade of hospital physician who has security of tenure and whose post should be a recognized preconsultant and not subconsultant appointment. Attempts to improve the position of the junior hospital physician from his underpaid, overworked state in a government service remain slow due to protracted negotiations which lack any urgency. It is hoped that, with the advent of the Royal Commission's consideration of the remuneration claim, a new spirit in our hospital service will emerge.

Diet and Pregnancy.—The Ministry of Food and Agriculture has carried out a survey of the strange dietary cravings that some pregnant women experience. Of 1,000 women, 187 had a particular desire to eat coal; others desired such articles as toothpaste, whitewash, wallpaper, and plaster. Some women got up in the night to get a mouthful of coal dust. Even raw neat spices, mustard, pepper, and salt were relished by some. Pickles and cereals were popular, but the most frequent craving was for raw fruit, usually apples or oranges. Some women experienced an aversion for foods they normally enjoyed, and some found smoking suddenly distasteful. With some the cravings were constant with each pregnancy, but in others they were different. The cause of these desires is not known, but it is suggested that it may be connected with the disturbance of mineral or vitamin equilibrium associated with the extra demands of the pregnancy. Whatever the cravings though, many of the mothers-to-be made great efforts to keep them secret from their husbands.

British Medical Students' Association.—The British Medical Students' Association, founded in 1942, has a membership that includes over 90% of the medical students in the country. It is purely a professional organization, providing a means of communication between medical students in the different universities and hospitals and also between British students and those in other countries. It presents the medical students' point of view to the medical profession and to other interested bodies. The organization has an executive committee and four regional councils. Local activities of the constituent organizations include lectures, visits, discussions, and the showing of films from the British Medical Association and other medical film libraries. Among its publications are the *British Medical Students' Journal,* which appears once a term, and an annual list of vocational appointments for those members requiring work in hospitals during vacations. The British Medical Students' Association takes a keen interest in medical education and is in the process of compiling a report on the medical curriculum. It is a founder member of the International Federation of Medical Students Association, whose membership now embraces the associations of 18 nations, and is recognized by the World Medical Association and UNESCO.

Students and Examinations.—Dr. Nicolas Malleson (*British Medical Journal,* Sept. 7, 1957) stated that nervous strain is frequently seen in students before and during major examinations. Efficiency of study is reduced and the prospects of success impaired. At University College Student Health Center, it has been estimated that 10% of students for major examinations experience strain, and for lesser examinations it amounts to 3%. Since British universities and technical colleges have 170,000 full-time and about 500,000 part-time students, the total number of cases is high. The main symptoms are those of overt anxiety, such as insomnia, persistent apprehension, pessimism, increasing difficulty in studying, and growing desperation. Daytime torpor may follow this in some, while others develop such psychosomatic symptoms as nervous dyspepsia or headache. First-rate students as well as the worst may be affected, and fear may be of the examination itself or of possible failure. This may produce varying degrees of panic and self-reproach. Most students recognize their state of mind, but a few refuse to connect it to the pending examination. The rare psychiatric disturbance is usually due to an underlying mental instability. The treatment required is confidence from the physician that the student is mentally capable of passing his examination and continual encouragement until the crisis is over. Drugs, usually mild hypnotics, are rarely required, but most effective is an interview on psychiatric lines with clear explanation to the student of his position and guidance to break the vicious circle of the preexamination stress.

CORRESPONDENCE

INSURANCE MEDICINE

To the Editor:—Enclosed you will find some amusing statements which appeared in the claim files of one of the large insurance companies of these United States. The statements are those of claim adjusters and of both patients and physicians appearing on the customary claim forms used in submitting a claim for injury or disease. I have gleaned these treasures over a period of several years.

FROM THE CLAIM FILES

1. Man tripped and fell on me while playing softball injuring left knee. Injury turning to stone.
2. Jeep accident. While maneuvering injured my leg.
3. Stricture of the urethra complicated by fallen arches.
4. This insured states that on the morning of Nov. 21st, 19— *he* was sitting down in front of *her* sewing machine getting ready to do some work when in some manner the chair slipped and she fell to the floor, falling on her rectum. She states that she felt a shock but thought it was a slight bruise and applied some home remedies. Later she called Dr. M—— who took an x-ray which showed a dislocation. She went to the —— Hospital and was confined there.
5. Claimant states when 3 weeks old had whooping cough and her mother always said this was the cause of the shortening of her leg.
6. The claimant is mostly confined because of her inability to get around.
7. Patient is an airline hostess. Removal of a small hemorrhoid. Patient unable to move her bowels while in flight.
8. —— noted a puffiness under her right eye which would come and go.
9. I took my father to a specialist, Dr. T——. He found my father had an abscess in his throat and he had to cut it. He took $25.00. My father is now recuperating from the pain.
10. He maintained that an insect flew into his nostril causing him to sneeze very hard, injuring his side.
11. Unable to stand on feet due to handling heavy wine.
12. Tonsillectomy and adenoidectomy and fissure and hemorrhoid removed from rectum.
13. Then sought medical aid to Dr. K., who stated he had a frozen belly from drinking cold drinks—advised bed rest with hot applications.
14. She advised that on Sept. 29th, 19— she worked as usual but did not feel well that day, complaining of a sort of vacant feeling in her head.
15. X-rays were taken. He was found to have temperature of 104.
16. Arm is still in a cast. He expects it to be taken off this week.
17. I was shot in my place of employment by a burglar.
18. —— insured injured his knee, while riding in an elevator, which dropped because of a broken cable.
19. Occupation "5c chiclet catcher."
20. She is a very sick girl, she weighs between 240 and 260 lbs. and is exceedingly overweight.
21. She has arthritis and was informed she will not get well so long as this condition lasts.

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LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Charitable Hospitals: Liability for Negligence of Nurse.—This was an action for damages for injuries caused by the alleged negligence of a nurse employed by the defendant hospital. From a judgment for the hospital, the plaintiff appealed to the court of civil appeals of Texas.

The evidence disclosed that the plaintiff was admitted to the defendant hospital, as a paying patient, for treatment of a skin rash or fungus growth on his feet and lower legs. His attending physician prescribed a daily bath of the plaintiff's feet in water in which a potassium permanganate pill had been dissolved. The medicine for the plaintiff was kept in a pigeonhole receptacle with his name and room number thereon. There were some pills in this pigeonhole that were to be taken internally and the potassium permanganate pill which was to be used externally. These pills were kept in separate containers. The box containing the permanganate pills was plainly marked "Potassium Permanganate." The nurse charged with the administering of the medicines to the plaintiff took the pills that were to be taken internally and the pill that was to be used externally to the room of the plaintiff and administered all of said pills to him internally. As a result of the plaintiff's taking the potassium permanganate pill he became ill and vomited. His doctor was immediately called and he pumped out the plaintiff's stomach.

It is the well-settled law of this state, said the court of appeals, that a charitable hospital is not liable for injuries to its patients sustained as a result of the negligence of its employees unless the hospital failed to exercise ordinary care in the selection or retention of such employees and this is true without regard to whether the patient was a paying patient or a free patient. The principal issue was therefore whether the hospital had been negligent in the selection of the nurse or in its method of making that selection. The evidence showed that the nurse in question had completed the prescribed course of study for vocational nurses and had received a license from the state to practice her vocation. A vocational nurse must be trained to administer medication. She had been practicing her vocation continuously for more than three years. The hospital administrator testified that she met all of the technical requirements of a vocational nurse and that he had never received any notice that she was in any way incompetent prior to the administration of the potassium permanganate pill or at any time subsequent thereto. The head floor nurse could not foresee that a vocational nurse would administer internally a pill that was supposed to be administered externally. The nurse was qualified and competent to give medicine and was familiar with the hospital's method of administering medicine. The floor nurse knew that the nurse was competent and qualified, and she was not negligent in assigning her to administer the medication to the plaintiff. The Court of Appeals therefore held that there was no negligence in the selection of the vocational nurse to administer the medicine to the plaintiff. The Court also held that there was no negligence in the way the hospital labeled the potassium permanganate or in the way the hospital kept each patient's medication in a separate pigeonhole.

Accordingly, the judgment in favor of the defendant hospital was affirmed. *Penaloza v. Baptist Memorial Hospital, 304 S. W. (2) 203 (Texas, 1957).*

Malpractice: Failure to X-ray Possible Fracture.—This was an action for damages caused by the alleged negligence of the defendant physician. From a directed verdict in favor of the physician, the plaintiff appealed to the Supreme Court of Colorado.

The plaintiff testified that she had fallen from a chair and landed on her left heel. She was found in a prostrate condition and literally carried to the defendant's office by her husband. A displacement of the os calcis was plainly visible but the defendant diagnosed the condition as a sprain. He took no x-ray, nor did he either apply a cast or recommend that she keep off the foot. About a week later the fracture was discovered by another physician and corrective surgery performed. It was the plaintiff's contention that the subsequent surgery would not have been necessary if the defendant had properly diagnosed and treated the foot in the first place.

The defendant testified that the plaintiff was not carried into his office and that there was no visible displacement of her foot when he examined her. He admitted, however, that, if she had told him she had landed on her heel, he would have suspected a fracture and in that case he would have advised an x-ray at once.

The Supreme Court said that a physician is bound to accord his patients such reasonable care, skill, and diligence as physicians in good standing in the same neighborhood in the same general line of practice ordinarily have and exercise in like cases. A physician who negligently diagnoses as a bruise or sprain what is in fact a fracture may be liable in damages to his patient. Furthermore, said the court, to avail himself of the defense of a mistake of judgment, it must appear that the physician used reasonable care in exercising the judgment, which, in this case, was a controverted issue of fact to be determined by the jury. In determining the validity of a motion for a directed verdict in favor of the defendant, the evidence must be considered in the light most favorable to the plaintiff. The plaintiff's evidence, said the court, was sufficient to lead the jury to conclude that the defendant was negligent in not having an x-ray taken; in not putting the foot in a cast; and in not instructing the plaintiff to bear no weight on the foot. The court therefore felt that the case should have been submitted to the jury. Accordingly, the judgment in favor of the defendant physician was reversed and the case was remanded for a new trial. *Foose v. Haymond, 310 P (2d) 722 (Colorado, 1957).*

Malpractice: Liability of Surgeon for Negligence of Orderly.—This was an action for damages for injuries caused by the alleged negligence of the defendant surgeon. From a judgment in favor of the plaintiff, the surgeon appealed to the Supreme Court of Colorado.

The plaintiff's injuries occurred after he had been placed on the operating table and had been rendered unconscious by the anesthetic. The plaintiff had been on his back after being administered the anesthetic, and Dr. Bowles, the anesthetist, was engaged in checking respiration, pulse, and other related matters concerning the condition of the patient and making a record thereof. An orderly, whose name does not appear in the record, was at the foot of the operating table and the anesthetist was at the patient's head. The defendant surgeon entered the room and, although not fully gowned and requiring a nurse to tie his gown, gave orders to place the patient on his side, which the orderly proceded to do. The orderly was holding the plaintiff by the hips in the position as directed when he was told to "get a strap" or "strap the patient." Whereupon the surgeon turned to have his gown tied, and the anesthetist turned her head and began making entries on the chart. The orderly left the side of the operating table to get the strap as directed. The patient then fell to the floor and was injured.

In addition to the surgeon, the anesthetist and the hospital were also sued but the jury returned verdicts in their favor. The defendant surgeon contended that the patient was under the charge of the orderly and the anesthetist when the accident occurred, that the orderly was an employee of the hospital over whom the surgeon exercised no control, and that the anesthetist was an independent contractor. The defendant admitted that as chief surgeon he was in command during the operation, but contended that his responsibility did not begin until the start of the operation.

Under the evidence, said the Supreme Court, the jury could have found all three defendants negligent. On the other hand there was evidence that the anesthetist, under the prevalent practice, had the duty of making the chart entries and of necessity would have to divert her attention from the patient. There is evidence in the record that the orderly was acting on specific orders of the doctor to "get a strap"; this evidence, if believed by the jury, would support a finding that the orderly had done nothing more than obey the orders of the surgeon in charge. The verdict of the jury finding the surgeon solely responsible was not in error.

Under the admittedly complex activity in an operating room, the court continued, the exact moment at which the responsibility of the surgeon begins cannot be stated as a matter of law. It is not a matter of law when the sole responsibility of the hospital ends and the surgeon's begins or supersedes it. These are questions of fact for the jury under the particular circumstances of each case. The surgeon cannot arbitrarily fix the time at which his responsibility begins. His actions set the time. The legal responsibility of the surgeon to his patient in a similar case is aptly stated in this way:

> The patient is helpless under the influence of an anesthetic, and absolutely at the mercy of the surgeons performing the operation, and they are charged with the duty to see that no preventable injury results to their patient. Under the modern science of surgery a surgical operation, with modern hospital appointments, is a complex enterprise. Necessarily the various agencies that enter into it must be performed by different individuals, under the active supervision and direction of the operating surgeons in charge. If the operating surgeons were not made liable for the negligent performance of the duties of those working under them, the law in a large measure would fail in affording a means of redress for preventable injuries sustained from surgical operations.

The point at which the surgeon assumes supervision and direction in the operating room is the crux of the problem, not the time when he begins to operate on the patient.

In this case, concluded the court, the jury was justified in determining that the surgeon had entered the operating room and had assumed command and responsibility by giving direct orders concerning the placing of the patient in position on the operating table, even though he was not actually at the side of the patient, at the moment, ready to make the first incision. The jury was further justified in finding that it was negligence on the part of the surgeon to order the attendant to do anything which might take him away from the physical person of the patient without first assuring that someone was at hand to attend and hold the patient.

Accordingly the judgment of the trial court against the defendant surgeon was affirmed. *Beadles v. Metayka, 311 P (2) 711 (Colorado, 1957).*

Malpractice: Failure of Competent Surgeon to Seek Assistance.—This was an action for damages for injuries caused by the alleged negligence of the defendant surgeon. The trial court found in favor of the defendant. The court of appeals reversed, however, so the defendant physican appealed to the Supreme Court of Georgia.

larly occupied and also, as it happened, talking to Johannesburg. That simplified matters. The next thing her husband knew he was hearing a clipped British voice saying, "I say, old man, your wife is locked out and freezing to death. Let her in."

Language is no barrier to communication between hams of different countries. Besides Morse code, there are two internationally accepted codes. One is a set of 43 Q signals that deal with essential technical information. For instance, QRS means "Shall I send more slowly?" QRM reports, "I am being interfered with." But the ham sending QRM might just as well mean "My wife says to for heaven's sake get off that set and come in to dinner!" The other code is a set of abbreviations which, although based on English, is understood by hams everywhere. The place of operation for every ham is a "shack." A girl friend is a YL (young lady), and, when the ham marries the girl, she becomes XYL (ex-young lady). The scorned mass of nonhams is known as BCL's (broadcast listeners). The term "73" is an old telegraph signal meaning "best regards"; 88 means "love and kisses," and "30" stands for end of transmission.

Hams talk about practically anything over the air. Naturally much of the time is spent discussing technicalities, comparing notes on performance, and discussing gear. A "traffic handler" spends a great deal of his time relaying messages free of charge for the general public. At the end of the last war, GI's all over the world got messages home to their families via devoted hams. There is a ham in Slingerlands, N. Y., who spends 12 to 14 hours a day at his rig arranging radio telephone communications between GI's stationed in Greenland and their friends and families at home. A "DX hound" is an airway fisherman, always trying to hook some rare or elusive distant part of the world. And a "rag chewer" is just a fellow who loves to talk and never runs out of subject matter—the weather, his girl, his job, the latest gag—providing it is in good taste; amateur radio is self-censored and very conscious of its own dignity and responsibility.

The ranks of amateur radio fans include all ages, an astonishing variety of professions, and both sexes (although women are not nearly as interested as men). The youngest ham on record is a little girl who became fascinated at the age of 6 and had learned the International Code by the time she was 8. Probably the oldest on record is a gentleman in Herkimer, N. Y., who was still busily "rag-chewing" at 84 years of age. They all talk to each other via the mails as well as the air waves. Hams exchange thousands of QSL's, postal size cards which may be mailed anywhere in the world for 10 cents. Each QSL is as distinctive as the operator's fingerprints. He usually designs a special emblem to trim it up and uses it as a background for his call letters. A ham's "shack" will be papered with such communications.

Two magazines, *QST*, published by the American Radio Relay League, and *CQ*, published in New York City, together with the aforementioned Radio Amateur Call Book, are the ham's bibles, and the ARRL is the ham's club. In addition, female operators have organized their own league, the Young Ladies' Radio League. The roster of members of all these organizations, besides some 2,000 doctors, includes such famous names as Herbert Hoover Jr., Gen. Curtis LeMay, vice-chief of staff of the Air Force, and Arthur Godfrey.

Any ham who wants to talk to Arthur Godfrey can reach him by calling K4LIB. Any ham who wishes to locate any of the many doctors and dentists among the amateur radio fans can find them listed in a directory compiled by Dr. Arthur W. Woods (W4GJW) and Dr. Henry A. Tadgell (W1AGM). A recent and exciting book about radio operators is "S. O. S. at Midnight" by Tommy Tomkins (W6ATX).

MEDICAL FILM REVIEWS

Hypothyroidism: Its Pathognomonic Diagnosis and Its Treatment: *16 mm., color, sound, showing time 28 minutes.* **Prepared by Paul Starr, M.D., Los Angeles. Produced in 1957 by Churchill Wexler Film Productions, Los Angeles, for and procurable on loan from Warner-Chilcott Laboratories, Morris Plains, N. J.**

This motion picture shows patients who have hypothyroidism, followed by a discussion of the physical and biological processes throughout the body that are affected by thyroid hormone. The major section of the film, on the diagnosis of hypothyroidism, is presented with criticisms of the basal metabolic rate and radioactive iodine—uptake tests. The laboratory method of measuring the serum protein-bound iodine (PBI) is illustrated, with evidence of the value of this test as a diagnostic aid. Treatment of hypothyroidism is discussed. Patients are shown to have a rise in PBI level, a fall of serum cholesterol value, and an increase in basal metabolic rate under thyroid medication. The film concludes with a section on the instruction of the hypothyroid patient. This is an accurate description of hypothyroidism as seen in clinical practice. Ordinarily, not as much confidence is placed upon the PBI level in determining therapy. The analysis of blood for PBI is a difficult laboratory procedure which demands skilled technicians and precise laboratory controls. If one is to prescribe medication based on a single laboratory procedure, one must recognize that there are many factors which may influence the laboratory analysis. The photography is excellent and the film is well organized. This film is highly recommended for general practitioners, residents, interns, and medical students.

ILLUSTRATED FILM REVIEWS

Illustrated reviews of current films, a regular feature in The Journal, *consist of an introduction by the author followed by a pictorial digest of actual frame enlargements selected as key points of the film.*

Ralph P. Creer, *Director*
Motion Pictures and Medical Television, Council on Scientific Assembly.

HYPOTHYROIDISM

Paul Starr, M.D., Los Angeles

While classic hypothyroidism (myxedema) is easily recognized, subclinical hypothyroid cases may present no specific diagnostic symptoms. Yet borderline hypothyroidism is a common cause of general debility, retarded bone maturation, ovarian and uterine dysfunction, fatigue, and cardiac and mental disorders. The level of thyroid activity can be determined by the protein-bound iodine (PBI) test, a specific and convenient method of measuring serum protein-bound iodine. The optimal dosage of thyroid medication may be established simply by increasing the intake until a normal PBI level is obtained. Maintenance therapy is then continued through the patient's life, subject, of course, to any dosage modifications indicated by periodic laboratory checks. The written review of this film appears on page 1310 of this issue.

Fig. 1.—There may be total thyroid hormone deficiency in the cretin or the case of myxedema. However, it is the prevalence of moderate thyroid deficiency that makes the consideration of hypothyroidism important.

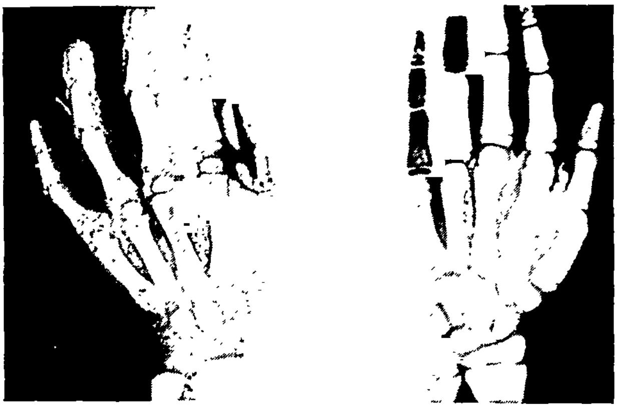


Fig. 2.—Significant among the body processes affected by thyroid hormone deficiency is delayed ossification in children. Compare the wrist x-ray of a 5-year-old hypothyroid patient *(left)* with that of a normal child *(right)*.

Fig. 3.—Another effect often seen is on muscle fiber. Degeneration is often manifested by undue fatigue, lack of endurance, muscular weakness, and pain.

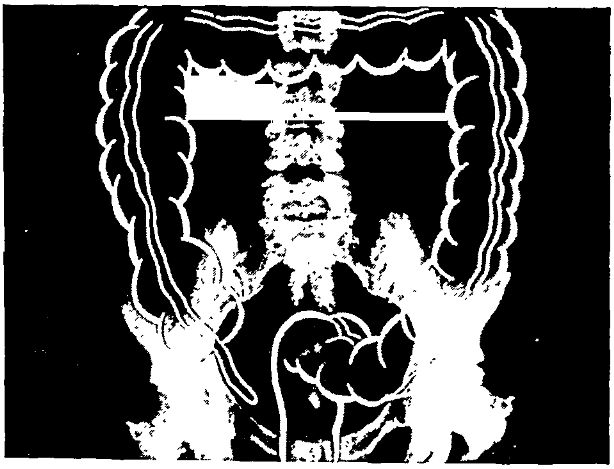


Fig. 4.—Lack of thyroid affects the smooth as well as the striated muscles. This is particularly noticeable in sluggish contractibility of the colon, resulting in chronic constipation.

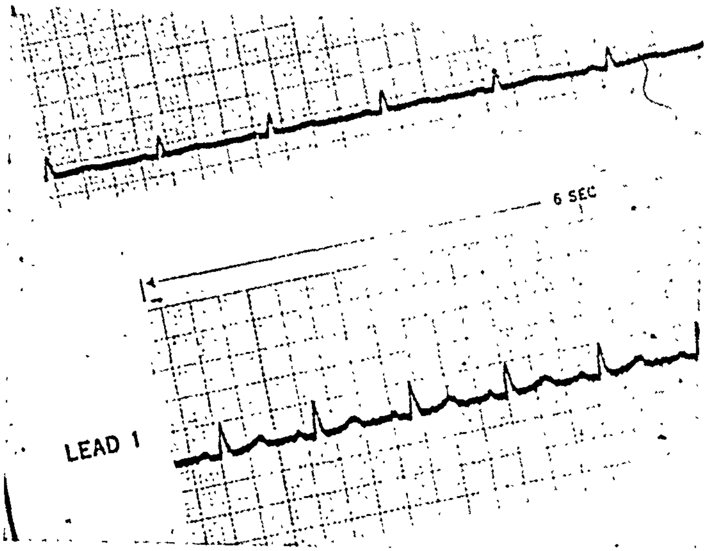


Fig. 5.—Myocardial tissue is also affected. An evidence is this flat electrocardiographic recording contrasted with one taken four months after the start of thyroid therapy.

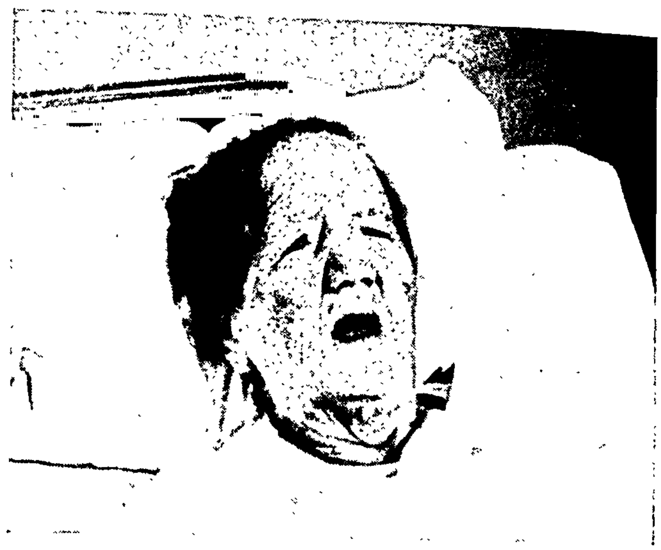


Fig. 6.—The central nervous system is greatly affected as evidenced by loss of memory, sluggish mental activity, somnolence, or even psychosis in the myxedema patient.

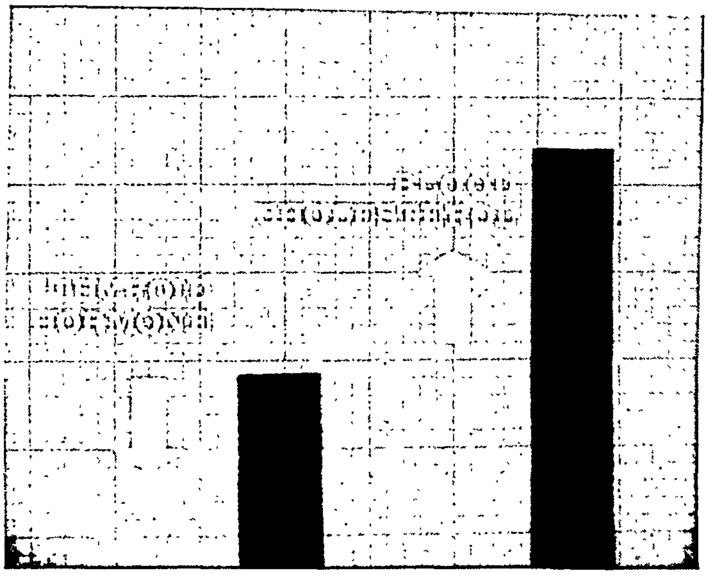


Fig. 7.—An evidence of the biochemical disturbance resulting from thyroid hormone deficiency is the rise in cholesterol content with a decrease of thyroid hormone in the blood.

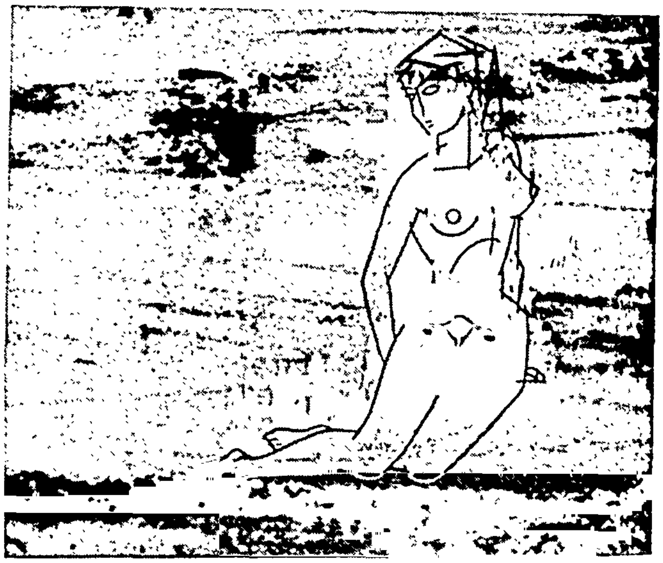


Fig. 8.—The endocrine glands are affected, especially the pituitary in its relation to the thyroid, adrenal cortex, and gonads.

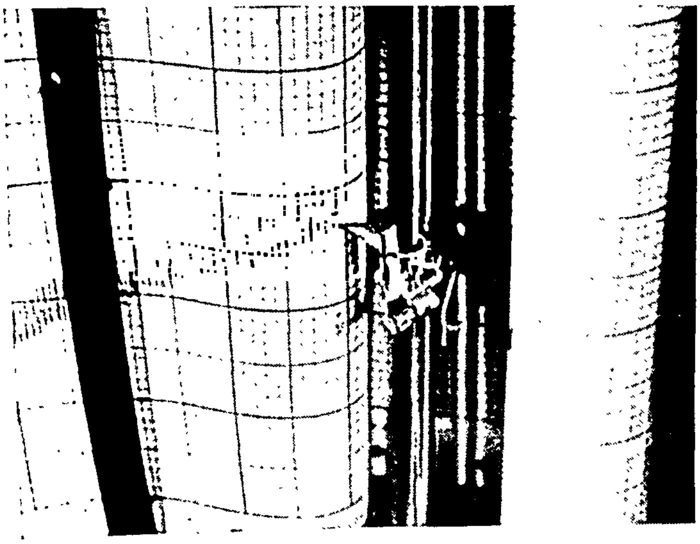


Fig. 9.—The basal metabolic rate apparatus should not be relied on for unequivocal diagnosis, since it frequently does not reveal hypothyroidism.

Fig. 10.—It is believed that the best screening procedure is to measure circulating thyroid hormone in the blood by means of the serum protein-bound iodine (PBI) level.

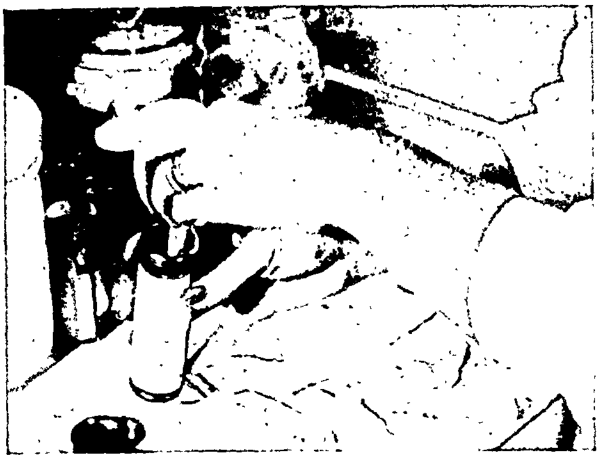


Fig. 11.—The serum can be taken during office hours without requiring a basal state, or that the patient fast or rest.

Fig. 12.—Batches of specimens are incinerated preparatory to color development.

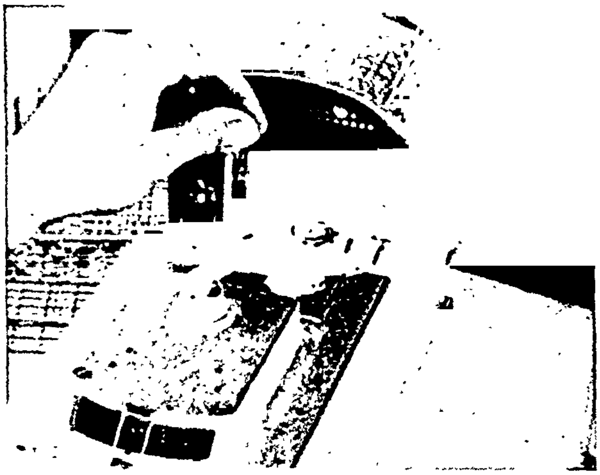


Fig. 13.—The amount of iodine measured is in thousandths of a milligram. One technician should be able to perform 400 tests a month.

Fig. 14.—This woman generally appeared healthy, but her PBI level was only 2 mcg. Three grains (0.2 Gm.) of thyroid daily raised the level to 5.4 mcg. within four months.

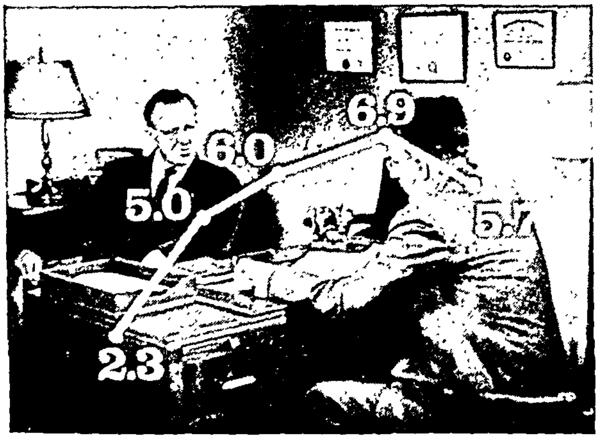


Fig. 15.—Continued administration eventually depresses the endogenous output of thyroid hormone, requiring increased dosage. Once the maintenance dose is finally established, thyroid should then be taken for life.

Fig. 16.—The need for thyroid medication is frequently greater during pregnancy. This patient miscarried twice. Her PBI level was 3.3 mcg. Thyroid medication resulted in two successful pregnancies.

Fig. 17.—Patient was unable to become pregnant. History and physical examination revealed little, but her PBI level was 2 mcg. Patient became pregnant 30 days after being put on therapy of 1 grain (60 mg.) of thyroid daily.

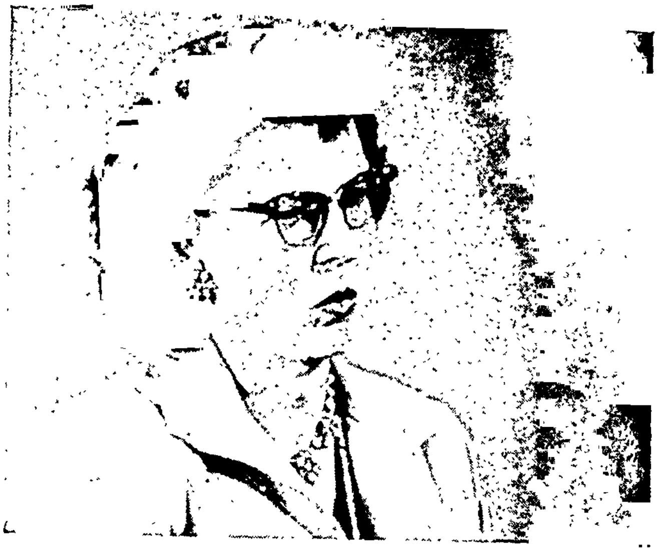


Fig. 18.—Goiter is usually a significant sign that the system requires thyroid hormone. This patient was much improved on thyroid medication after her goiter had increased in size during two pregnancies.

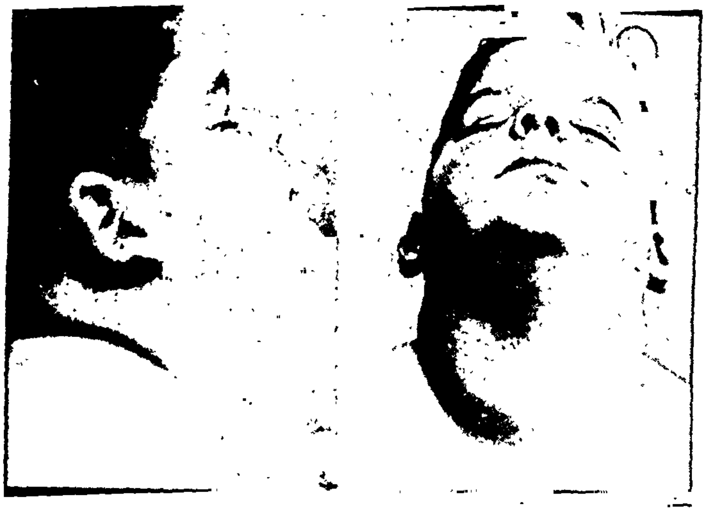


Fig. 19.—At 8 years of age, patient showed nodular goiter. His weight was 106 lb. (48 kg.) and bone age, 2 years. Though he had been taking ¼ grain (15 mg.) of thyroid since infancy, his PBI level was only 1 mcg. He suffered a severe reaction whenever dosage was increased.

Fig. 20.—The patient's inability to tolerate an increased dose suggests that the increase was too rapid. Actually, the nervousness was a sign of the deficiency. Symptoms disappeared on a gradual increase in dosage to 2 grains (0.12 Gm.) daily.

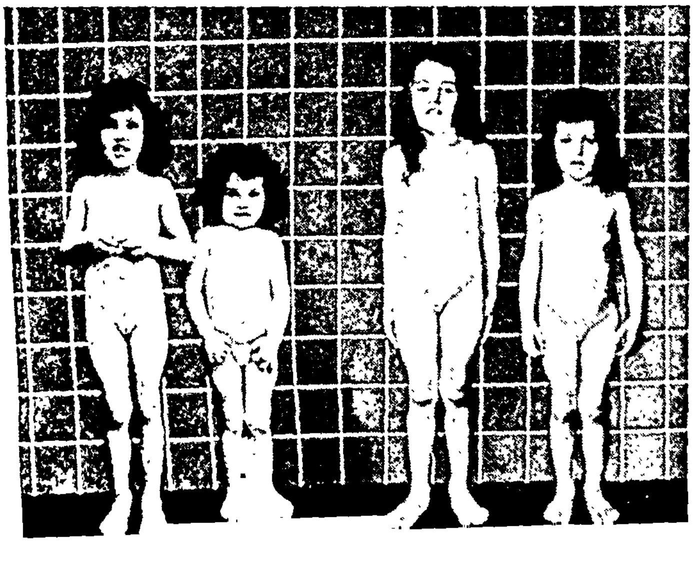
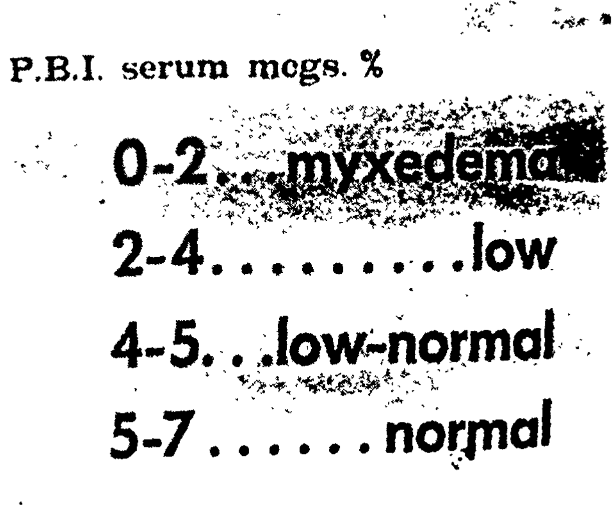


Fig. 21.—The smaller of these identical twins was thyroid deficient. After nine months of medication, patient's bone age increased from 18 months to 3 or 3½ years and she grew 4 in.



P.B.I. serum mcgs. %

0-2...myxedema
2-4.........low
4-5...low-normal
5-7......normal

Fig. 22.—The degree of thyroid insufficiency is indicated by the PBI scale. Many thousands of patients have low serum thyroid hormone levels which may now be easily detected by the PBI determination.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Glutamic-Oxalacetic Transaminase in the Diagnosis of Myocardial Infarction: II. Comparison of Serum Transaminase Activity with Determinations of Serum Aldolase, Cholesterol, α_2-Globulin, Iron, Copper and Lactic Dehydrogenase. A. Hanson and G. Biörck. Acta med. scandinav. 157:493-502 (No. 6) 1957 (In English) [Stockholm].

Serum glutamic oxalacetic aminopherase (transaminase) levels were determined in 158 patients with suspected myocardial infarction. The results obtained confirmed the previous impression of the great diagnostic usefulness of this method in patients in whom the diagnosis of myocardial infarction is not certain. Normal transaminase values—if obtained neither too early nor too late after the onset of symptoms—almost exclude the diagnosis of infarction. Because the serum transaminase test is quite expensive to be used as a routine measure, comparisons were made in 78 patients of the results of the serum transaminase determinations with those of the determinations of serum aldolase, cholesterol, alpha$_2$-globulin, iron, copper, and lactic dehydrogenase levels.

The determinations, except those of serum cholesterol, showed a definite but not constant relationship to serum transaminase activity when the latter exceeded 40 units but little or no relationship when it was below 40 units. Serum aldolase, alpha$_2$-globulin, copper, and lactic dehydrogenase levels followed the general pattern of serum transaminase activity in most patients, but serum iron levels showed an opposite trend. Half the copper values described as "parallel," however, fall within the range of normal variability. In many patients in whom a general parallelism was observed, a time lag of 24 hours was found when compared with the transaminase values. Because of the relatively low specificity and the time lag, none of these determinations can completely replace the determinations of the serum transaminase levels, but the determination of the serum lactic dehydrogenase levels may serve a similar purpose and perhaps be used with some advantage in patients who are admitted to hospital at a time when the peak of the serum transaminase activity may already be passed. The specificity of the determination of the serum lactic acid dehydrogenase level appears to be somewhat inferior to that of the serum transaminase level. Being less expensive than the serum transaminase test, it may be used as a screening test in suitable cases. Both the transaminase and the lactic dehydrogenase tests give certain indications as regards prognosis.

Clinical Considerations on Virus Pneumopathies. A. Carotti. Minerva med. 48:2255-2259 (June 27) 1957 (In Italian) [Turin, Italy].

The author reports on a group of 20 patients suspected to have virus pneumonia. The patients presented acute disturbances in the respiratory apparatus. The pneumopathy was the only symptom present in some patients and in others was combined with pathological manifestations of the liver or of the nervous system. Each patient presented a different roentgenologic picture. Treatment with chloramphenicol had an immediate and lasting beneficial effect on the fever and on the general condition of the patients. Virus pneumopathies are difficult to differentiate from pneumopathies of the tuberculous or the neoplastic type. The epidemiologic criterion, when it exists, is helpful in diagnosing virus pneumopathy.

Absence of Pulse in Both Upper Extremities Due to an Aortic Arch Anomaly. A. C. Azevedo, R. Roubach, A. A. DeCarvalho and others. Brit. Heart J. 19:438-440 (July) 1957 [London].

The authors report on a 30-year-old man with absence of the pulse in both upper extremities. Pulses were normal in the arteries of the legs and the neck. Intercostal collateral circulation and rib notching were revealed by chest roentgenograms. The absence of pulses in both upper extremities with normal or increased pressure in the lower extremities has been described in patients with the so-called pulseless disease caused by arteritis of the aortic arch, the outstanding symptoms of which were visual disturbances and syncopal attacks. The absence of these symptoms and the normal pulses in both carotid arteries were the reasons for rejecting a diagnosis of arteritis of the aortic arch and

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The place of publication of the periodicals appears in brackets preceding each abstract.

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single fat meal between normal and atherosclerotic patients. Unlike the metabolic defects in diabetes mellitus, which can be uncovered by a glucose load, the metabolic faults in patients with atherosclerosis are not readily influenced by single or repeated high-fat meals.

Summary of the Results Obtained with Intracavitary Aspiration in 98 Patients. M. Giaquinto and G. Mauro. Arch. tisiol. 12:353-360 (March) 1957 (In Italian) [Naples].

The results obtained with intracavitary aspiration in 98 patients are reported on. The patients were 14 to 57 years old, most of them between 26 and 35; the age group 36 to 45 was second in frequency. The patients had derived no benefit from previous treatment. The results of intracavitary aspiration could not be assessed in 6 patients who were not followed because transferred to other hospitals. Fifty-one patients recovered after aspiration alone, 22 after aspiration combined with thoracoplasty. Recovery was expected in 11 patients who were still being treated. Except for 8 patients in whom the results were negative, aspiration improved the general and local condition of the patients. The proper use of antibiotics was of great benefit. Late results were satisfactory.

The L. E. Phenomenon in Rheumatoid Arthritis. L. J. A. Parr, E. A. Shipton, P. Benjamin and P. H. H. White. M. J. Australia 1:900-905 (June 29) 1957 [Sydney].

The authors present the history and their own clinical experiences with the use of antimalarial drugs such as quinacrine (mepacrine) or chloroquine in the treatment of lupus erythematosus. The question arose whether all the patients who responded favorably had arthritic manifestations of disseminated lupus erythematosus or had typical rheumatoid arthritis with associated L. E. cells, or whether there was a close link between these 2 diseases, the L. E. cell being the manifestation of common parentage. The authors cite some of the reports that induced them to use the antimalarial drugs in rheumatoid arthritis, and the results they achieved with this treatment. Discussing the appearance of the L. E. cell in lupus erythematosus they show how difficult it is to ascertain whether the L. E. cell is specific for that disease. They investigated the L. E. phenomenon in 55 patients with rheumatoid arthritis. The L. E. cells were found in 35 of the patients.

The 20 patients with rheumatoid arthritis in whom the L. E. cells were not demonstrated did not differ clinically from the 35 in whom they were found, except when the presence of a typical rash suggested the diagnosis of disseminated lupus erythematosus and rheumatoid arthritis. The blood of these patients was examined only once for the phenomenon. Only 7 patients of the 35 showing the phenomenon had previously had steroid therapy. It would seem from these observations that the L. E. cell phenomenon is much more common in rheumatoid arthritis than was previously thought. Whether the presence of the L. E. phenomenon indicates that the disease should be designated as systemic lupus erythematosus with arthritis rather than as rheumatoid arthritis the authors are not in a position at present to decide. It is possible that the phenomenon represents a particular reaction of the connective tissues to an antigen, either bacterial or chemical, a nonspecific antigen-antibody effect. If patients who show the L. E. phenomenon are considered to be suffering from systemic lupus erythematosus, then the whole concept of rheumatic disease must be altered and a new approach to treatment will be necessary, with careful differentiation of the 2 types of disease.

The Significance of the L. E. Cell Test. D. C. Cowling and I. D. Thomas. M. J. Australia 1:905-909 (June 29) 1957 [Sydney].

Various methods of performing the L. E. test have been introduced, and certain procedures enhance its sensitivity. The authors performed 400 L. E. tests, some being repeated tests. The test proved positive in 46 of the patients, and the histories of 39 of these were reviewed. Typical disseminated lupus erythematosus was observed in 9 patients, rheumatoid arthritis in 8, hepatitis in 10, hemolytic anemia in 4, cardiac failure in 2, peripheral vascular disease in 4, and miscellaneous disorders in 2. Discussing the mechanism of the test, the author says that the components necessary are (1) living polymorphonuclear cells, (2) dead cells as a source of nuclear material; and (3) a serum factor, which is a gamma globulin component. As a result of observations on the group of patients with hepatitis and the finding of the L. E. cell phenomenon in patients with acquired hemolytic anemia, the authors believe that the L. E. cell test indicates the presence of autoantibodies to a component of cell nuclei. By comparison, in the acquired hemolytic anemias, the presence of erythrophagocytosis has been accepted for some time as evidence of a circulating antibody to erythrocytes.

The test has been regarded as specific for disseminated lupus erythematosus and allied disorders, but in view of the wide variety of clinical features in patients with the L. E. phenomenon, the authors believe that it is specific for a group of conditions leading to production of autoantibodies and that it is not necessary to regard all patients who give a positive result to the test as having disseminated lupus erythematosus.

Microlithiasis Alveolaris Pulmonum: A Case Report. E. L. Foote. J. Maine M. A. 48:230-31 and 238 (July) 1957 [Brunswick].

The author reports on a 63-year-old white man with microlithiasis of the alveoli of the lung. The patient had had symptoms of hypertensive and arteriosclerotic heart disease with episodes of congestive heart failure without x-ray evidence of pulmonary infarctions. Death was caused by a massive intracranial hemorrhage from an arteriosclerotic plaque in the basilary artery. Autopsy revealed numerous intra-alveolar concretions. The latter were ossified, in contrast to many of the previously reported cases in which calcification was the predominating feature. The concretions were small and involved single alveoli. Possible organization of alveolar exudation after congestive heart failure is considered as a causative factor. Earlier cases of microlithiasis of alveoli of the lung collected from the literature were also diagnosed at autopsy, but later characteristic x-ray pictures were recognized; they consisted of areas of mottling and density, at times obscuring normal structures. In some cases, the increased density was in the mid-lung portion. The diagnosis of the disease was first established in 1954 by lung biopsy.

Polyarteritis Nodosa and Its Treatment with ACTH or Cortisone. S. Johnsson and T. Leonhardt. Acta med. scandinav. 157:479-492 (No. 6) 1957 (In English) [Stockholm].

Two women and 5 men with histologically confirmed polyarteritis nodosa were treated with corticotropin (ACTH) and/or cortisone. Three patients were given corticotropin alone, 3 both cortisone and corticotropin, and 1 cortisone only. Four patients received only 1 course of hormone therapy, 2 received 3 courses, and 1 patient received 5 courses. The duration of the courses varied from 14 to 163 days. The total dose of corticotropin varied from 190 to 800 I. U. and the doses of cortisone ranged from 5.5 to 17.5 Gm. Four of the 7 patients had been treated with sulfonamides for various conditions before the onset of polyarteritis nodosa, and 1 of these patients died of a fulminant recurrence after subsequent re-treatment with sulfonamides. One patient had repeated attacks of diarrhea with blood-stained stools for which he was treated with phthalylsulfathiazole. The diarrhea had become worse when cortisone therapy was instituted. Diarrhea and intestinal bleeding persisted, and the patient died. Autopsy revealed grave ulcerative changes in the colon. Microscopic examination revealed unexpected lesions of polyarteritis nodosa in the intestines, spleen, and lungs. It seems possible that in patients with ulcerative colitis sulfonamide treatment may lead to complicating polyarteritis nodosa. It is difficult to say whether the sulfonamide treatment was of causal significance in the other patients who had been treated with sulfonamides before the onset of polyarteritis nodosa; in the patient in whom re-treatment with sulfonamides was followed by fulminant recurrence of polyarteritis nodosa the sulfonamide therapy was evidently the cause.

Six of the 7 patients obtained a good primary result from the hormone therapy, with improvement in the general condition and a decrease in the severity of symptoms. Two of the 7 patients were still alive 5½ years and 2 years, respectively, after discontinuation of hormone therapy. These 2 patients did not show any signs of reactivation of their polyarteritis nodosa and apparently were healed. Three patients with a primary satisfactory response died 3½ months, 2½ years, and 1 year after hormone therapy had been instituted. Careful examination of the heart, lungs, liver, kidneys, spleen, and muscles at autopsy did not reveal active polyarteritis nodosa. One patient died 6 weeks after the hormone therapy of cerebral thrombosis, which was probably not a complication of polyarteritis nodosa. The remaining patient with the clinical picture of ulcerative colitis was the only one who did not respond to any appreciable degree to the hormone therapy.

The results obtained in these patients and in 34 patients with polyarteritis nodosa treated with corticotropin or cortisone collected from the literature suggest that hormone therapy is the most promising treatment for polyarteritis nodosa. It can apparently delay or prevent further progression of the disease and even induce remissions, and occasionally patients may be cured. Irreversible organic changes are, however, common in this disease and prognosis is difficult. Symptoms and signs of cardiorenal insufficiency are likely to make the outcome less favorable but should not always be considered as a contraindication to hormone therapy. The best response to hormone therapy can be expected when treatment is started in an early stage of the disease and in the absence of symptoms of cardiorenal disease. Despite the immediate response to hormone therapy, recurrences are to be expected but repeated treatment may induce a lasting remission.

The Problem of Hiatus Hernia Complicated by Peptic Esophagitis. G. E. Lindskog and J. L. Kline. New England J. Med. 257:110-113 (July 18) 1957 [Boston].

Of 41 patients with a sliding type of esophageal hiatus hernia, 12 had complicating peptic esophagitis. The age of these patients ranged between 39 and 74 years; 8 were male. The male preponderance is characteristic of the "ulcer diathesis." The causative factor common to all patients of this group was the reflux of corrosive gastric juices through an incompetent esophagogastric sphincter. Six different methods of treatment were employed in the 12 patients, a fact that points out the complexities and the need of individual treatment of each patient. Conservative treatment was used in 3 patients because of their advanced age; 2 obtained relief of symptoms, 1 was well for 2 years and will accept the required operation. Repair of the hernia alone gave excellent results in 3 patients with mild esophagitis. Distal esophagectomy and extensive proximal partial gastrectomy with esophagogastric anastomosis were performed on 5 patients who had irreversible cicatricial changes within the muscularis of the distal esophagus and concomitant stenosis. One unfavorable result was in a patient with chronic alcoholism who consented to a phrenic crush alone.

A Family Reunion: A Study of Hereditary Hemorrhagic Telangiectasia. R. M. Bird, J. F. Hammarsten, R. A. Marshall and R. R. Robinson. New England J. Med. 257:105-109 (July 18) 1957 [Boston].

The study of a large family in which 32 of 170 members (19%) were affected with hereditary hemorrhagic telangiectasia was stimulated by a 60-year-old patient. This patient gave a 15-year history of recurrent massive epistaxes, tongue bleeding, and hematuria and was found to have numerous lesions of hemorrhagic telangiectasia scattered over the lips, tongue, face, and extremities as well as in the urinary bladder. All the living members of the patient's family were examined. None of the spouses was found to have the disease. The mode of transmission was that of a simple autosomal dominant. No genetic linkage was found between hereditary hemorrhagic telangiectasia and certain blood groups. The typical lesion was a macule that resembled a crushed spider, 2 or 3 mm. in diameter, cherry red and not elevated. The larger nodular and spiderlike lesions usually appeared in the skin much later in the disease. Overt telangiectasia became increasingly manifest with age, the characteristic lesions increasing both in size and number. Although the telangiectases themselves did not pulsate, hemorrhage from these lesions in the nose or tongue were profuse and pulsatile, as if an artery had been severed. The sites of hemorrhage in the affected members of the family were chiefly nose and mouth; gastrointestinal or genitourinary bleeding occurred only in those with bleeding from a more accessible site as well. Only 2 members gave a history of hemoptysis. An impressive history of recurrent nasal hemorrhage in childhood was given by 85% of the members with skin lesions. One member died of hemorrhage. The disease had no sex predilection. There was no skipping of generations. It is remarkable that none of the members of the 5th generation was affected by the disease. The family showed a remarkable adjustment to this life-threatening disease. Clannish attitudes had been fostered that robbed hemorrhage of its usual importance. High values were placed on independence and resourcefulness. Procreation was encouraged.

Hereditary Pancreatitis. J. B. Gross and M. W. Comfort. Proc. Staff Meet. Mayo Clin. 32:354-360 (July 10) 1957 [Rochester, Minn.].

It is not generally appreciated that chronic relapsing pancreatitis may occur in a familial form. In 1952, Comfort and Steinberg had reported chronic relapsing pancreatitis in 4 members of a single family. In the same year Gross and Comfort observed a second family in which chronic relapsing pancreatitis affected multiple members; in this family 3 adults are definitely affected and possibly 2 others. Early in 1955 a third such family came to their attention. Information accumulated since that time indicates that 6 members are definitely affected, with at least 8 others suspected, but not yet proved, to have the disease. The pedigrees of these 2 unrelated families are presented, and observations on these families confirm the original impression that in certain families chronic relapsing pancreatitis is transmitted as an autosomal dominant gene.

The hereditary form of the disease appears to resemble the sporadic form in most respects. The hereditary form differs in that it appears to begin earlier in life, to date has involved females predominantly, and is, so far, unassociated with chronic alcoholism or gallstones. The cause and pathogenesis of hereditary pancreatitis are not known; it is suspected that the inherited defect predisposing to recurring bouts of pancreatitis is metabolic in nature. The significance of minor abnormalities of porphyrin excretion in 4 persons in these 2 families seems questionable. It appears quite probable that the hereditary form of chronic relapsing pancreatitis occurs more frequently than has been realized in the past and that increasing awareness of the entity will result in the discovery of a larger number of families so affected.

Pheochromocytoma: Report of Five Cases, One a Spontaneous Cure. D. D. Albers, E. H. Kalmon and K. C. Back. Tr. South Centr. Sect. Am. Urol. A., pp. 97-104 (Oct.-Nov.) 1956 [Kansas City, Mo.].

The histories of 4 patients with pheochromocytoma are added to the literature. In one patient the tumor seemed definitely malignant and in the other 3 patients they were histologically benign. A fifth case, which had been reported previously, is reviewed. One of the patients experienced a spontaneous cure as the result of a hemorrhage into the tumor. This was demonstrated by the disappearance of pressor substances from the urine before operation was performed. Provocative tests were not employed in this series of patients, but benzodioxane and Regitine were very helpful. The intravenous injection of the urine of the patients into dogs to demonstrate pressor substances produced positive results in each of the patients, and retroperitoneal pneumography localized the tumor or tumors in each of the patients in whom it was used. The detection of 5 patients with pheochromocytoma in the past 4 years, and in a community (Oklahoma City) where none had previously been reported, proves the value of all the publicity given this type of tumor in recent years.

Kartagener's Syndrome. J. J. Krejci and B. S. Kleiman. Maryland M. J. 6:385-390 (July) 1957 [Baltimore].

Kartagener's syndrome is a rare triad of total situs inversus, bronchiectasis, and rhinopharyngosinusopathy. Involvement of the upper respiratory tract includes deviation of the nasal septum and/or nasal ployposis; pharyngeal disease usually includes hyperplasia of lymphoid tissue; the sinusopathy may be inflammatory, degenerative, or developmental in nature. The authors present the history of a 41-year-old man with Kartagener's syndrome. Some 104 patients with this syndrome had been reported up to 1955. The theory that there is a common congenital origin of the 3 elements of the triad of Kartagener is further substantiated by the finding of Kartagener's syndrome in twins and siblings. The bronchiectatic lesions, pathologically, are not different from those observed in the usual bronchiectasis of the so-called acquired type. It is stressed that, when the physician is confronted with situs inversus, he must entertain the diagnosis of Kartagener's syndrome and evaluate the nature of any associated pulmonary parenchymal disease. In the patient presented, it was of advantage that Kartagener's syndrome was thought of early in the course of the disease. Awareness of the syndrome prevented uncertainty as to the nature of the pulmonary disorder. Decisions concerning the need and the proper time for surgery and choice of anesthesia were thereby facilitated.

Sarcoidosis, Hypercalcemia and Treatment with Cortisone. L. Koster, H. A. Valkenburg, K. J. H. Verschoof and others. Nederl. tijdschr. geneesk. 101:1166-1171 (June 22) 1957 (In Dutch) [Haarlem, Netherlands].

Sarcoidosis, or Besnier-Boeck-Schaumann's disease, is frequently accompanied by hypercalcemia. The authors cite figures on the incidence of this hypercalcemia from the literature and show that it has become more important since patients with sarcoidosis are being treated with cortisone and corticotropin, the steroid hormones that exert an influence on the calcium metabolism. In the study of 63 patients with sarcoidosis the authors included the examination of the eyegrounds, a search for calciuria, evaluation of renal function, and determination of the calcium, inorganic phosphorus, and alkaline phosphatase contents of the blood serum. These studies had 2 aims: (1) to obtain more exact information about the severity and extent of the monosymptomatic apparently inactive form of sarcoidosis, and (2) to decide on the advisability of steroid therapy for sarcoidosis. In 6 of the 63 patients severe, and in 5 others moderate disturbances were observed in urinary elimination of calcium during a calcium tolerance test. The histories of 6 of these patients are presented. The examination of the eyegrounds in 33 of the patients with the apparently inactive form of sarcoidosis revealed definite changes in 7. They consisted of small grayish-white, strongly refracting foci in the retina.

Steroid therapy was begun in the 11 patients with hypercalciuria. In 9 the urinary elimination of calcium was reduced, in another patient the effect was not clear, and in the remaining patient a paradox effect resulted, in that the calciuria increased further, first under the influence of prednisone and then under hydrocortisone, and so the steroid therapy was terminated. The authors conclude that cortisone therapy is indicated in sarcoidosis that is accompanied by disturbances in the calcium metabolism.

The New Derivatives of Cortisone in the Treatment of Nephropathies: Clinical and Functional Results. A. Bergamini, B. Bonati and S. Freddi. Semaine hôp. Paris 33:2559-2563 (June 30) (In French) [Paris].

The clinical effect of the new synthetic steroids, prednisone and prednisolone, was studied in patients with various forms of kidney disease, and special attention was paid to the accompanying changes in renal function. The therapeutic results, which were good and even excellent, compared favorably with those obtained by the use of cortisone. Both of the new drugs were equally effective, and there were fewer disadvantages and side-effects connected with their use. Favorable results were obtained in a few cases of chronic glomerulonephritis, but in general the indications for prednisone and prednisolone are the same as those for cortisone and corticotropin. The clinical cure and the biological improvement obtained in all the patients have lasted in some for several months, but the relapses that have occurred and the lessened efficacy of the drugs when treatment is reinstituted make it necessary to be cautious in predicting the outcome; although the prognosis is certainly better with prednisone than with cortisone, it is still too soon to say whether the therapeutic problem of nephrosis can be solved by the use of the new derivative. The determination of the optimum dosage, the rate of administration, and the duration of treatment are especially important from this point of view. Indications are that the treatment should be prolonged and discontinuous and that the dosage should be individually determined in each case.

Well-defined changes in renal function govern the improvement in the patient's condition. These changes may be divided into (1) a glomerular component (an increase in the glomerular filtrate) and (2) a tubular component (a reduction of the tubular reabsorption of water); usually, but not always, they act together to provoke diuresis and to bring about a partial correction of the functional anomalies of the disease. Efforts to establish a correlation between the clinical and the functional effects show that the glomerular changes are irregular and often unrelated to the diuresis and the metabolic data; sometimes, however, a connection can be seen between them and the elimination of urea. The tubular component, on the other hand, shows good correlation and is more directly connected with the diuretic crisis and the resolution of the edema. This fact and the undeniable efficacy of the synthetic steroids in conditions associated with edema and disturbances of water reabsorption suggest that the action of these steroids is complex but that it bears essentially on the renal tubule. An important qualitative difference between the action of cortisone and that of prednisone lies in the fact that the initial phase of salt and water retention that accompanies the use of cortisone does not appear in patients treated with prednisone. The theoretical and practical implications of this difference may well repay investigation.

Intermittent Claudication: A Survey of Two Hundred Patients and an Assessment of the Value of Intra-arterial Therapy. N. Bennet-Jones and A. F. Murphy. Angiology 8:291-301 (June) 1957 [Baltimore].

The 200 patients reviewed are an unselected group of consecutive male patients attending the peripheral vascular clinic of the United Liverpool Hospitals on account of intermittent claudication. The 7 women with claudication were excluded not only because the symptom is rare in women but because the authors are not certain that the condition in the two sexes is exactly comparable. Sixty-one male patients had their symptoms for less than 6 months and the remainder for a longer period before presenting themselves at the clinic. Many had been treated for a long time with a variety of vasodilators taken by mouth without apparent benefit. None of the men were less than 30 years old, and 75% were in the 6th and 7th decades. The etiology was investigated with regard to the type of work performed and to the consumption of alcohol and tobacco. Two hundred patients in the same age and social groups treated for diseases other than vascular insufficiency served as controls. Far more patients than controls undertook light rather than heavy work. Only 2 of the patients with claudication were nonsmokers. There were more nonsmokers in the control series. Improvement was observed in a number of patients in whom abstinence from smoking was the only treatment. Nearly two-thirds of the patients with claudication were total abstainers from alcohol or had a drink only on special occasions. Only 12% took a drink regularly, whereas in the control series nearly 50% had a glass of beer or some spirits daily. These figures suggest that a moderate consumption of alcohol, such as a glass of beer a day, may lessen the chances of arterial insufficiency.

The administration of chemical vasodilators by mouth or by subcutaneous, intramuscular, or intravenous injection has given disappointing results. When, however, the injection is made into the main artery of the diseased limb, the greatest concentration of the drug is brought to the required site. Of the many substances tried, the authors found papaverine sulfate as most effective for intra-arterial injections. They regard 200 mg. of papaverine sulfate diluted with isotonic sodium chloride solution to 10 ml. as a safe dose. The patient in whom the condition seemed acute was admitted to hospital and an injection given into the artery each day for 7 days. Otherwise, the patient came as an outpatient once a week for 6 weeks. At the end of the course of injections a detailed assessment was made, and usually the patient was observed for several months before being subjected to a further course of treatment. Sixty per cent of 110 patients treated with intra-arterial injections of papaverine sulfate obtained satisfactory results. The authors believe that intra-arterial papaverine sulfate is the treatment of choice in intermittent claudication, except when increased walking distance is undesirable or when rest pain or necrosis have supervened. These latter conditions are contraindications to its use.

SURGERY

The Importance of Visualization of the Proximal Portion of the Common Duct and Hepatic Ducts in Operative Cholangiography. E. B. McCabe and W. D. Heinrich. Radiology 69:240-243 (Aug.) 1957 [Syracuse, N. Y.].

Opinions are divided as to the value of operative cholangiography in biliary surgery. While some suggest that it be employed in all patients, others stress its dangers. In the experience of these authors it has not increased the morbidity and no significant complications incident to the examination have occurred. They stress that good diagnostic films can be facilitated by having a cassette tunnel positioned when the patient is placed on the table. A scout film taken at this time will insure correct exposure factors and position. The radiologist should be present in the operating room to interpret the films immediately, since the surgeon may overlook significant details and also may accept films of inferior quality. There is no contraindication to immediate repetition of the examination if the films are of poor quality. Visualization of both the common duct proximal to the cystic duct and the hepatic ducts is most important in determining whether residual stones, tumor, or other pathological conditions are present. The authors present 4 illustrative case histories and conclude that the operative cholangiogram demonstrates the entire biliary tree and is the only method whereby the hepatic ducts are visualized completely. It is of importance to determine the presence or absence of disease in the proximal portions of the system as well as the distal segment.

Low Back Pain and Sciatica Due to Posterior Compression. S. Teneff. J. Internat. Coll. Surgeons 28:146-155 (Aug.) 1957 [Chicago].

Observations on 500 patients with low back pain and sciatica and a review of the literature revealed that in many patients with this condition the irritation and compression of the roots of the sciatic nerve are not due to the presence of a herniated disk or not to this alone. Other conditions that, alone or associated with a herniated disk, may cause low back pain and sciatica are degeneration of the intervertebral disk, arthritic apophysitis, arachnoiditis, periradiculitis, periduritis, lumbar scoliosis, congenital or acquired anomalies, lumbar arthritis deformans with osteophytic proliferations, so-called hypertrophy of the yellow ligaments, spondylolisthesis, sacroileitis, peridural and periradicular varicose veins, apophyseal fractures, fractures of the margins of the vertebral bodies and tumors of various types. The radicular irritation and compression may be caused by pathological factors that exert their influence on the nerve roots from the frontal, posterior and lateral directions. The cause of the posterior compression which was observed in a large number of patients seems to be an increase in thickness of the yellow ligaments resulting from degeneration and inflammation caused by traumatic lesions. These alterations of the yellow ligaments until now have been interpreted as hypertrophy of these ligaments in the anterior direction.

Although preoperative diagnosis of the cause of radicular irritation and compression is desirable, the mere establishment of their existence by preoperative tests justifies surgical intervention. It is, therefore, of utmost importance to establish the cause of the radicular irritation and compression in the course of the surgical intervention since the decision concerning the type of operation which should be performed depends on this diagnosis. The aim of the operation must be the creation of a space which is large enough for the passage of the roots involved.

Effect of Desiccated Red Blood Corpuscles on the Cicatrization of Wounds: Its Application in Plastic Surgery. H. Valentin Giles. Prensa méd. argent. *44:980-985 (March 29) 1957 (In Spanish)* [Buenos Aires].

Seventeen patients with operative wounds, traumatic lesions, and burns which had been refractory to previous plastic surgery were treated by application of a dusting powder compound to the lesions. The compound contained desiccated red blood corpuscles, a derivative of porpherine (tetramethyl divinyl porphin-methyl propionate), and tyrothricine. The first 2 ingredients stimulate hematic action on proliferation of granulating tissues; the third is an antibiotic. Local treatment included dusting with the powder and covering the dusted area with a vaseline-impregnated gauze; then a bandage was applied. This treatment was repeated every 24 to 48 hours. The dusting powder proved to be atoxic and did not cause any anaphylactic reaction. This was due to the ingredient of protein-free red blood corpuscles. The compound rapidly lessens exudation, suppuration, and pain. It favors cleansing of the wounds and burns (even of third degree), granulation, and epithelization. If lesions are very large this dusting powder will favor cellular proliferation and granulation and thus prepare optimum conditions for grafting.

Postoperative Transient Aldosteronism. J. G. Llaurado and M. F. A. Woodruff. Surgery 42:313-324 (Aug.) 1957 [St. Louis].

The adrenal cortex produces mainly 2 types of hormones: 17-hydroxycorticoids, which; like cortisone, exert their effect predominantly on carbohydrate and nitrogen metabolism, and mineralocorticoids, which influence the sodium and potassium distribution in the body. Most studies of the effect of surgical trauma on the adrenal cortex have been based on the excretion of 17-hydroxycorticoids, and the mineralocorticoids have been largely neglected. While changes in nitrogen excretion after surgical trauma can be correlated with the levels of 17-hydroxycorticoids in urine, there is a remarkable lack of correlation between changes in electrolyte metabolism and 17-hydroxycorticoid levels. The discovery, isolation, and identification of a potent electrolyte-regulating corticoid of the adrenal cortex, now called aldosterone, has opened new perspectives in the study of alterations associated with sodium and potassium disturbances, particularly since a bioassay method has been designed that can be used as an index of the aldosterone present in urine.

for this operation on the basis of symptoms of episodic arterial insufficiency before major infarction has occurred.

Chylothorax and Chylous Ascites: A Study of 302 Selected Cases. J. T. Nix, M. Albert, J. E. Dugas and D. L. Wendt. Am. J. Gastroenterol. 28:40-55 (July) 1957 [New York].

According to Nix and his associates chylothorax and chylous ascites are not disease entities but rather sequels of an internal lymph fistula of obstructive or traumatic origin. They established rigid criteria for acceptance of cases from the literature and found that, of 479 cases reviewed, 294 met their criteria of a chylous fluid plus one or more of the following factors: (1) the presence of free fat (microscopically); (2) a fat content higher than plasma; (3) a protein content half that of plasma; and (4) surgical or autopsy evidence of lymphatic fistulas. These 294 cases combined with 8 observed at Charity Hospital of Louisiana in New Orleans makes a total of 302 cases upon which this report is based. The same method of case selection was used for chylothorax and chylous ascites. The diagnosis of chylothorax or chylous ascites is rarely made before thoracentesis or paracentesis. In the chemical identification of chylous lymph it should be remembered that no other fluid in the human body has a fat content higher than plasma and a protein content approximately half that of plasma. The incidence of chylothorax and chylous ascites are rising with the increase in such procedures as aortic grafts, cardiovascular surgery, and hepatic and pancreatic resections.

The large volume of thoracic duct flow explains the rapid development of chylothorax and chylous ascites. The clinical signs and symptoms result from a combination of mechanical compression and chylous fluid loss. The most prominent symptom of chylothorax was dyspnea and of chylous ascites, abdominal enlargement with abdominal pain; the patients with combined chylothorax and chylous ascites showed both dyspnea and abdominal enlargement and pain. Chylothorax is best treated by ligation of the thoracic duct; a definitive treatment for chylous ascites remains to be developed. Cure was reported in 55 of 123 patients with chylothorax; 52 of 146 with chylous ascites; and in 4 of 36 with both chylothorax and chylous ascites. Ligation of the thoracic duct was carried out in 19 patients with traumatic chylothorax, and in 17 of these cure was reported.

The lymphatic network is a primitive venous system, and diseases of the lymphatic trunks closely resemble diseases of the veins. For instance, with femoral or saphenous vein obstruction, increased intravenous pressure, incompetency of the valves, and dilatation and distortion of the distal veins result; likewise with thoracic duct obstruction, increased intralymphatic pressure, valvular incompetency, lymphangiectasis, and retrograde circulation of the lymph ensue. Internal lymph fistulas with resultant chylous effusions are caused either by trauma to the lymphatic trunk or obstruction of the thoracic duct, cisterna chyli and collateral lymphatics with a resultant increased intralymphatic pressure and pressure necrosis of the lymphatic wall. The prognosis is more favorable in traumatic lymph fistulas, as the lymphatics are normal and the treatment more clearly defined.

Orlon and Nylon Prostheses for Abdominal Aneurysms and a Five Year Observation on Experimental Aortic Homografts. C. A. Hardin. Ann. Surg. 146:78-85 (July) 1957 [Philadelphia].

The clinical experience with orlon or nylon prostheses in 18 consecutive patients with symptomatic abdominal aneurysm is reported on. This graft material has the advantage of procurability and adaptability. The longest period of observation was 24 months. Twelve patients undergoing elective resection and prosthetic graft replacement for abdominal aneurysm are leading a full and active life. One patient survived a frank rupture of an abdominal aneurysm with resection and replacement by graft. Postoperative coronary occlusion was the most serious complication and caused death in 3 patients. Two patients with ruptured aneurysm died from the effects of irreversible hemorrhagic shock. A 5-year observation on the fate of fresh and preserved canine thoracic homografts showed serious degenerative changes of calcification, ulceration, and loss of elastic elements in the graft.

An Evaluation of the Etiological Factors of Lymphedema Following Radical Mastectomy: An Analysis of 1,007 Cases. N. Treves. Cancer 10:444-459 (May-June) 1957 [Philadelphia].

The author is concerned with factors of possible causative significance in lymphedema or swelling of the arm after radical mastectomy. It appears that lymphedema following radical mastectomy cannot be attributed to any solitary factor, but a combination of several factors may operate in any given case. Probably the most frequent cause is interference with the return of lymph because of ablation of the profunda lymphatics with the nodes of the axilla. Interference may be due directly to the axillary dissection or to cicatrization following infection or fibrosis following roentgen-ray therapy. Angulation of the vein, interfering with both venous return and return of lymph from vessels in the wall of the vein, and reflex spasm of the axillary vein likewise may play a part in lymphedema of the arm after radical mastectomy. Other factors, such as roentgen-ray therapy, infection, presence or absence of axillary metastases, wound healing, and obesity were analyzed by the author in 1,007 patients who were admitted with cancer of the breast to the Memorial Center for Cancer and Allied Diseases in New York between 1939 and 1943.

Operation was performed in 848 patients, the remainder being treated by roentgen rays because they were regarded as inoperable. Lymphedema of the arm developed in 319 of 768 patients who had primary operable disease. Analysis of the records of these patients revealed that swelling of the arm developed in about 41% of the patients with primary operable breast cancer. Roentgenotherapy seemed to result in swelling of the arm when it was followed by surgical treatment but not when the patient was not operated on. Since combined roentgen and surgical therapy is used mostly in patients with severe axillary involvement, the advanced stage of disease may partially explain the association with lymphedema. Obesity appeared to be a predisposing factor. Increasing degrees of obesity were associated with larger percentages of patients with swollen arms. The extent of axillary involvement alone did not account for the occurrence of lymphedema. Postoperative infection and delayed healing alone were not associated with an increased incidence of the swollen arm.

Internal Mammary Node Biopsy—Its Place in the Treatment of Breast Carcinoma. J. T. M. Sandy. Canad. M. A. J. 77:75-79 (July 15) 1957 [Toronto].

The author studied the involvement of the internal mammary lymph node chain in breast carcinoma by means of biopsy in 25 patients with "operable" carcinoma of the breast. The lump in the breast is incised or excised and examined by frozen section in the usual way. When carcinoma is proved, an incision is made along the line of the medial skin flap of a probable radical mastectomy and the latter is reflected to the midline of the sternum. The sternal origin of the pectoralis major is detached over the second interspace. The 2 intercostals are then divided laterally for about 1 in. from the margin of the sternum, thus exposing the pleura and internal mammary vessels. By gentle dissection with nontoothed thumb forceps it is possible to tease away the areolar tissue and fat with any associated lymph nodes which may be present. Metastatic deposits of tumor may occur in what clinically appears to be only fat, while enlarged lymph nodes do not necessarily contain tumor. If frozen sections of tissue from the second interspace demonstrate tumor emboli, no other spaces need be explored. If no tumor is found, the 1st, 3rd, and 4th spaces may be examined.

Fourteen of the 25 patients showed involvement of the internal mammary nodes. Of the 19 patients who had either central or inner quadrant lesions 13 had carcinomatous involvement of the internal chain of mammary nodes, whereas of the 6 with outer quadrant lesions only 1 had involvement of the internal mammary chain, and in this patient the axillary nodes were also involved. Of 11 patients with palpable axillary nodes 7 had involvement of the internal chain of nodes, and spread to the anterior mediastinum had occurred in 6 of 8 patients in whom the axillary nodes were free from invasion.

These figures are comparable to those in other studies and demonstrate that central and inner quadrant lesions will metastasize to the internal mammary chain in over half of the patients regardless of axillary involvement. While the internal mammary chain is much less commonly involved in outer quadrant tumors, a significant percentage will be positive if the axillas contain cancerous nodes. With very few exceptions, patients with spread to the internal mammary chain are beyond the stage where a surgical cure is possible. There would seem to be no place for a Halsted radical mastectomy in these cases. Whether the operator chooses to do a simple amputation or rely entirely on irradiation would seem to be largely a matter of individual preference. Support for both plans can be found in the literature. The value of internal mammary node biopsy in the treatment of breast carcinoma is that it increases the exactitude of the criteria of operability and thereby eliminates a proportion of unnecessarily radical surgery. The procedure requires a minimal increase in operating time and involves no special facilities or skill. Its use seems warranted as an adjunct to better surgical case selection.

Antral Exclusion with Vagotomy for Duodenal Ulcer: I. Acid Secretory Studies on 50 Patients. W. R. Waddell and M. K. Bartlett. Ann. Surg. 146:3-11 (July) 1957 [Philadelphia].

Acid secretory studies were made on 75 preoperative patients with active duodenal ulcer and on 50 patients who had antral exclusion with vagotomy for the definitive surgical treatment of duodenal ulcer. Preoperative examination revealed high acid concentrations and large quantities of total acid. Further elevations in the concentration and rate of acid production were caused by stimulation of broth, histamine, and insulin hypoglycemia. The secretion of acid was depressed after antral exclusion and vagotomy. The gastric remnant became unresponsive to stimulation. The hydrogen ion concentration is the most accurate measurement that can be made in such examinations. After operation the average of hydrogen ion concentration was approximately one-thousandth the preoperative level. Of the 50 postoperative patients, 30 were completely achlorhydric during the 2 basal periods. There is as yet no conclusive evidence that complete achlorhydria is necessary or even desirable, although control of acid-peptic digestion is crucial in the surgical treatment of duodenal ulcer. The clinical status of the patients was closely followed after antral exclusion and vagotomy. The results were good. None of the patients was incapacitated, when last seen, although diarrhea, mild dumping syndrome, and weight loss were present. There were no anastomotic ulcers. The success of antral exclusion and vagotomy as a procedure for definitive treatment of duodenal ulcer depends on whether the ulcer-forming tendency is controlled permanently. The technique of the operation is briefly discussed.

The Adrenocortical Response in Surgical Patients.

A. A. LeFemine, L. J. Marks, J. G. Teter and others. Ann. Surg. 146:26-39 (July) 1957 [Philadelphia].

A study of spontaneous alterations in adrenocortical function was made, based upon quantitative determination of both plasma and urinary 17-hydroxycorticosteroids (17-OHCS), in 18 selected male patients subjected to a wide variety of surgical treatment. Analysis of the results indicates that the actual pattern of adrenocortical response to an operation may vary considerably in different clinical situations. The usual adrenocortical response to an elective major operation consisted of a prompt increase of free plasma 17-OHCS following the onset of general anesthesia with a peak level from 4 to 12 postoperative hours. A more or less abrupt descent to normal plasma levels following the peak rise occurred within 36 to 48 hours. Variations in this pattern of response were observed. General anesthesia, pain, and shock are as important to recognize as stimuli in evaluating the adrenocortical response to operation as actual tissue trauma. Urinary 17-OHCS excretion rose promptly in response to surgical trauma and remained elevated several days longer than free plasma 17-OHCS levels before returning to preoperative values. No exact temporal relationship between plasma and urinary corticosteroids was demonstrated. The methods employed measured primarily free 17-OHCS in the plasma and conjugated metabolites of 17-OHCS in the urine. Four patients underwent 2 operations spaced 1 to 6 weeks apart. Observations suggested that a previous surgical operation does not exhaust the capacity of the adrenal cortex to respond to a second similar or more extensive surgical procedure.

Familial Polyposis of the Large Intestine: Report of a Large Family.

F. P. Turner. Ann. Surg. 146:131-135 (July) 1957 [Philadelphia].

Familial polyposis is a condition characterized by the appearance of multiple adenomatous polyps in the colon and rectum. Symptoms are usually first observed between the ages of 15 and 40, although the polyps may be present in infancy. Carcinoma may be expected to develop in aproximately 100% of the patients at a relatively early age, since the lesions are premalignant. The oldest known member of a family comprising 152 members died after a prolonged illness in 1894 at 45 years of age. She was known to have had severe diarrhea and abdominal cramps for some time prior to death. She had 10 children, 3 of whom are still living at the ages of 66, 76, and 81 respectively. One son died of cancer of the prostate at the age of 75. The descendants of these and 2 other children have apparently been free of intestinal symptoms. Eighteen members of the family are known to have inherited the disease. Six additional members probably had polyposis, with or without colonic cancer, at the time of death. The extreme seriousness of this condition is illustrated. The importance of early examination and early institution of proper therapy is emphasized. The average age of the 12 persons who are known to have died with colonic carcinoma was 35. The mortality of this disease is extremely high, unless early and adequate preventive surgical therapy is carried out.

Aspects of the Tubercle Bacillus in Osseous Tuberculosis Treated with Antibiotics: Therapeutic Consequences.

J. Duriez, A. Debeaument and J. Cauchoix. Semaine hôp. Paris 33:2539-2545 (June 30) 1957 (In French) [Paris].

Two important findings have emerged during the last 4 years from the bacteriological study of material obtained from osseous tuberculous lesions: (1) the progressive and fairly rapid sterilization of the lesions brought about, at least in appearance, by adequate treatment with antituberculous drugs, and (2) the rarity with which the tubercle bacilli in osseous lesions become resistant to antituberculous drugs. These findings should be taken into consideration in drawing up rules for the effective antibiotic treatment of osseous tuberculosis and in choosing the proper time for surgical intervention. The metabolic conditions, especially the anoxia, found in tuberculous bone lesions are unfavorable to the growth of tubercle bacilli. This fact has two important consequences: (1) it makes prolonged treatment necessary, because the efficacy of the antituberculous drugs depends to some extent on the intensity with which the bacilli multiply, and (2) it reduces the likelihood of drug resistance, because resistant strains are less apt to appear in bone lesions with their unfavorable metabolic conditions than in pulmonary lesions, especially cavities, in which the bacilli are numerous and their multiplication is intense. Antituberculous drug therapy should therefore be continued for at least a year: in most cases, the first 5 months of treatment will bring about a certain sterilization of the tuberculous focus and the rest of the time will cover the operative period, the convalescence, and even the resumption of activity. All 3 principal antituberculous drugs were given, usually in combination, to the authors' patients. In addition, the drug therapy was always supplemented by strict immobilization, which helps greatly in stabilizing the lesions. Emergency operations such as decompression in paraplegia or the evacuation of an abscess under tension are sometimes inescapable, but apart from these urgently needed measures, the surgical treatment of an important tuberculous focus should always be preceded by 4 or 5 months of antituberculous drug therapy. The sterilization of the lesions obtained during this period may not be complete or definitive but it will usually be enough to eliminate the dangers of dissemination and local progression accompanying the opening of an active focus and it will also give bone grafts the best possible chance for integration in cases in which a cavity is to be filled. Complications such as aggravation of local lesions, recurrence of abscesses, and the appearance of fistulas have occurred in several patients who were operated on without adequate preoperative antituberculous therapy, and, while these complications can usually be controlled by the postoperative use of antituberculous drugs, they are nonetheless undesirable and should be prevented rather than cured.

Treatment of Fractures of Neck of Femur. F. E. Godoy Moreira and F. Pires de Camargo. Rev. hosp. clin. 12:73-80 (March-April) 1957 (In Portuguese) [São Paulo, Brazil].

In dealing with fractures of the neck of the femur in a large number of cases, the authors observed that the failure of consolidation, even after a perfect reduction and good fixation of the fracture, is due to 2 factors: lack of spongy tissue in the medulla of the femoral neck, and early walking. Loss of spongy tissue in the medullary space is frequent, especially in the elderly. The space is often transformed into a cavity. The authors developed a technique for the treatment of fractures of the femoral neck. The technique consists of (1) reduction of the fracture by gentle maneuver and moderate manual traction, (2) roentgen control of reduction of the fracture in 2 planes, (3) osteosynthesis with a studbolt screw, (4) preparation of a tunnel above and paralleling the screw and taking of spongy tissue from the internal space of the femoral head with a cylindrical trephine, (5) introduction of a cortical tibial graft through the tunnel deep into the head of the femur, (6) filling of the medullary space of the femoral neck with the graft of spongy tissue taken from the femoral head, and (7) complete bed rest. The filling of spongy tissue in the medullary space is made by pressure proximal to and distal from the line of the fracture. Impaction of the fracture is then made. No cast is placed, but standing and walking are interdicted until perfect consolidation occurs, as shown by roentgenograms taken in 2 planes. After consolidation of the fracture, the patient is allowed to walk with crutches for the first 2 months or longer until roentgenograms of the femur show a rich formation of trabeculae in the head. Twenty-four patients with fracture of the neck of the femur were treated by this method in 1955. Consolidation of the fracture took place in about 2 months. There were no fatalities. Immediate and late results were superior to those obtained by any other technique. The technique of the operation is simple, and the operation is well tolerated. This is a preliminary note.

Primary Aldosteronism. M. D. Milne, R. C. Muehrcke and I. Aird. Quart. J. Med. 26:317-333 (July) 1957 [Oxford, England].

Hypokalemic weakness or paralysis due to excessive loss of potassium in the urine was first described in renal tubular acidosis. Later it was found that identical symptoms could occur in the de Toni–Fanconi syndrome and after ureterosigmoidostomy. Patients so described were acidotic, with reduction of both plasma potassium and plasma bicarbonate. The urinary loss of potassium could be explained as an obligatory excretion of fixed cation by kidneys which were inefficient in the synthesis and excretion of ammonia. Cases were also reported in which the potassium deficiency was more severe and was associated with extracellular alkalosis and increase of plasma bicarbonate. No satisfactory explanation of the excessive urinary loss of potassium in these patients was available until Conn in 1955 described the condition of primary aldosteronism. He showed that the basic cause of the disease was an adrenocortical tumor which secreted excessive amounts of aldosterone, causing increased loss of potassium in the urine with retention of sodium. Impairment of renal function was found to be due to the resultant potassium depletion. The authors describe observations on 2 patients with primary aldosteronism due to adrenal cortical adenomas. The first patient gave a history of severe periodic paralysis for many years. The second patient was virtually asymptomatic but was hypertensive and showed biochemical evidence of potassium deficiency.

Balance data are presented relating to the period of potassium repletion before operation and to the period following unilateral adrenalectomy. The patients were deficient of 1,000 and 400 mEq. of potassium respectively. The first patient also showed evidence of magnesium deficiency. Both patients showed a normal metabolic response to surgery, with temporary retention of sodium and chloride. Very little potassium was retained after operation, although there was a considerable increase of plasma potassium. The first patient had severe chronic pyelonephritis, with considerable impairment of renal function. The second had no renal abnormalities except those referable to her hypertension. The diagnosis of primary aldosteronism from potassium deficiency due to primary renal disease is discussed in detail. An anterior transabdominal exposure of both adrenal glands is considered to be the operation of choice in the former disease.

Acute Mesenteric Lymphadenitis. M. Borri. Sett. med. 45:195-206 (April 15) 1957 (In Italian) [Florence, Italy].

Emergency laparotomy performed on 500 patients (417 adults and 83 children) suspected of acute appendicitis revealed acute mesenteric lymphadenitis in 6 children, 5 to 14 years of age, 4 female and 2 male. The 6 children presented intense abdominal pain that became worse in the course of the day in which it occurred, vomiting or diarrhea, increased pulse rate, high fever, and marked leukocytosis. Two children presented swelling of the lymph nodes of the ileum and of the colon, 1 presented swelling of various mesenteric lymph nodes except those of the ileum and of cecum, and 3 presented swelling extended to all the lymph nodes of the mesentery. Histological examination of the enlarged lymph nodes revealed hyperplastic lymphadenitis. No inflammation of the appendix was observed. None of the children presented splenomegaly. High fever was present postoperatively; on the 3rd to the 4th day and in some children even on the 8th day the fever became abnormally high and remained so for 2 days. The symptoms, however, did not become worse when the fever increased. Antibiotics had no effect.

NEUROLOGY & PSYCHIATRY

"Polioencephalitis": A Clinical and Laboratory Study. B. Snell, D. Balducci and D. A. J. Tyrrell. Brit. M. J. 2:126-128 (July 20) 1957 [London].

Of 121 patients with paralytic poliomyelitis who were admitted to hospital in the course of the poliomyelitis epidemic of 1955, 9 were initially classified as having encephalitis. There was definite evidence of simultaneous infection by polio virus in 7 of the 9 patients; disseminated sclerosis was diagnosed in the 8th patient and the last patient had polyarteritis nodosa with involvement of the brain. The evidence of associated polio virus infection in the 7 patients was based on virus isolation by standard virologic techniques in 5 and on a rise in antibody titer in 2. There was disturbance of consciousness in 3 of the 7 patients, but after a brief febrile illness with some upper respiratory symptoms and headache, the patients were admitted to hospital with meningism, nystagmus, and signs of a slight upper or lower motor neurone paralysis. A similar but more severe illness was present in the other 4 patients with pronounced disturbances of consciousness and with death occurring in 1 of them. The cerebrospinal fluid was abnormal in all 7 patients, the protein level ranging from 30 to 85 mg. per 100 cc. and the cell count from normal to 50 per cubic millimeter. Protein level and/or cells were raised and the cells were either mainly or entirely lymphocytes. The cases of the first 3 patients resembled acute cerebellar ataxia and those of the 4 others resembled acute encephalitis. There was no clinical evidence of respiratory embarrassment to account for the loss of consciousness in the 4 latter patients.

The Immediate Treatment of Cerebral Embolism. A. B. Carter. Quart. J. Med. 26:335-348 (July) 1957 [Oxford, England].

The authors report studies on 60 patients with cerebral embolism, out of a total of 575 cases of acute apoplexy. They were divided into 4 groups: (1) 16 patients treated by repeated stellate block; (2) 18 patients who served as controls; (3) 15 patients treated by one stellate block followed by 14 days of treatment with anticoagulants; and (4) 11 patients treated with anticoagulants. In the present series no ill-effects were demonstrated in the infarcted area of brain at autopsy in fatal cases, but one elderly patient died of uremia as a result of bilateral renal hemorrhage. It is suggested that patients over 65 years of age, and patients with hypertension, should receive a modified course of anticoagulants. At the end of 3 months there was no significant difference between the control group and the patients treated by repeated stellate block. There was no significant difference between the group of patients treated by anticoagulants and stellate block and those treated by anticoagulants alone. There was a significant difference between patients who had received anticoagulants and those who had not, mortality being lower and the number of recoveries increased. It appears that anticoagulant therapy, if properly and carefully given, is without danger and of advantage in treating cerebral embolism and that stellate ganglion block has no effect on the final outcome.

Abacterial Epidemic Meningitis in Rural Areas and Isolated Settlements. J. Brockhaus and I. Kruse. Monatsschr. Kinderh. 105:241-246 (July) 1957 (In German) [Berlin].

An epidemic of meningitis which had occurred in the fall of 1956 in many parts of Eastern Westphalia, Germany, is reported. The disease was more common among children and adolescents of the rural population. It was highly contagious, the incubation period varied from 11 to 15 days, and the prognosis was favorable. The disease showed a familial spread and was observed 2 times among the population of children's hospitals; these observations suggested a direct transmission by close contact from person to person. Latent and asymptomatic forms may have occurred frequently, and these explain the spread of the disease. This form of meningitis was classified among the "poliomyelitis-like" diseases because of the many features which this new disease has in common with poliomyelitis, i. e., the incubation period, occurrence in siblings, the ratio between fully developed and abortive and asymptomatic forms, a tendency to occurrence in young persons, distribution in rural and urban areas, seasonal variations, and the occurrence of sporadic cases after the peak of the epidemic.

Of 85 patients reported on, 45 had a diphasic course; pain in the neck and back, vomiting, and fever were the predominant symptoms. The number of cells in the cerebrospinal fluid varied from 50 to 8,800 per cubic centimeter and was not related to the severity of the disease. The pathogenesis of the disease has not been elucidated. Myeloencephalic processes apparently occurred in addition to the meningitic process in some patients, but the encephalitic manifestations were as a rule benign. A neurotropic virus with biological properties similar to those of the poliomyelitis virus is probably the causative agent.

Hereditary Episodic Adynamia: A Special Form of Familial Periodic Paralysis with Hyperkalemia: First French Cases. M. Kaplan, P. Strauss, R. Grumbach and B. Aymard. Presse méd. 65:1305-1308 (July 13) 1957 (In French) [Paris].

Hereditary episodic adynamia, recently isolated by Ingrid Gamstorp, closely resembles familial periodic paralysis but may be distinguished from it by certain identifying characteristics, the most important of which is an increase in the serum potassium level during the attacks. The first cases of this peculiar malady to be reported in France were discovered in the family of an 8-year-old boy referred to the authors with a diagnosis of familial periodic paralysis in a degraded form. The disease, which was first noted in the child at the age of about 1 year, when he was learning to walk, was characterized by abrupt attacks of functional weakness which usually began with a feeling of heaviness in the legs. The paralysis that followed was complete; walking was impossible, and when the child was lying in bed he could neither raise his head nor turn over. He had difficulty in moving his jaws and was unable to cough or to breathe deeply. The attacks were accompanied by general malaise and cold sweats but not by pain or sensory disturbances. They lasted for a quarter or half an hour and occurred at an average of one a day, usually toward the end of the morning. The child was admitted to the hospital for study. Clinical examination revealed no abnormality. Hematological studies showed only a slight increase in the total bases and a moderate glycemia, but the serum potassium level, which had been expected to be low, actually proved to be high. The diagnosis of hereditary episodic adynamia was established by a provocative test dose of potassium chloride which was given orally and which produced an attack of moderate severity in about 15 minutes.

The prognosis in hereditary episodic adynamia is favorable. The patients are generally free from symptoms between attacks and the attacks themselves seem to occur less often as the patient grows older. They usually come on during a period of rest after activity and can be prevented or mitigated by movement. Genealogical investigation of the child's family, now counting 4 generations, showed that the disease, which first appeared in the second generation, is transmitted as a dominant trait: children who were affected had affected parents and children who were not affected had parents that were free from the defect. Five of the affected subjects were examined and are reported on in detail. These patients—consisting of the boy in whom the diagnosis was first made, his mother, a cousin german of the mother's, and her 2 children—all had similar symptoms of varying intensity and duration, and in all the serum potassium levels fluctuated in accordance with the progress of the attacks. The opposition between the hyperkalemia found in hereditary episodic adynamia and the hypokalemia of familial periodic paralysis raises many interesting questions relating to the nature of muscular contraction, the part played by the potassium ion in that contraction, and perhaps the endocrine—and especially adrenal—control of the metabolic disturbances dominating these 2 forms of periodic paralysis which are in many respects so much alike.

Reading Epilepsy. H. Stevens. New England J. Med. 257:165-170 (July 25) 1957 [Boston].

A variety of sensory or psychic experiences may presage or precipitate a convulsive seizure. Knowledge of this premonitory and sequential pattern of events that introduces the seizure often reveals the epileptogenic focus. Primary reading epilepsy, a new syndrome delineated by Bickford and his coworkers, is diagnosed by the history of a generalized grand mal seizure occurring after reading. Twitches of the jaw, increasing in frequency, warn the patient of an impending seizure. The process ceases if reading is stopped. In secondary reading epilepsy, a similar but separate entity, also identified by Bickford and associates, seizures may occur spontaneously or may be precipitated by stimuli other than reading, particularly by various forms of photic stimulation. The jaw-jerking phenomenon is absent. The histories of 2 patients wi and of 1 patient with primary reading epilepsy are presented. The patients with secondary epilepsy were boys, aged 11 and 17 years respectively. These 2 boys had no jerking of the jaw in connection with their seizures. The 11-year-old boy in whom the attacks of loss of consciousness occurred after reading had sustained a head injury 6 years previously. In the 17-year-old boy dizzy spells and lapses of consciousness were precipitated by prolonged reading but also by sudden flashes of bright light (flash of sunlight on opening the front door, or a flash from the automatic refrigerator light).

In the 24-year-old woman with primary reading epilepsy the attacks of loss of consciousness were preceded by twitching of the jaw. The reading of familiar prose or familiar music was less likely to precipitate an attack than attempting to read new music or reading Hebrew. The reading of Hebrew demanded considerable effort. It required the unconventional right-to-left scanning. In addition, the numerous and small vowel signs placed beneath the Hebrew consonants require vertical as well as right-to-left scanning. This would require not only eye movements of quite a different pattern from those used in reading familiar English or music but also much more intense scrutiny and concentration on the text. Electroencephalographic studies revealed abnormalities and a right frontal focus in the 11-year-old boy but revealed normal results in the 17-year-old boy. In the woman with primary reading epilepsy reading English of various sizes of print under varying conditions of illumination failed to produce dysrhythmia in the electroencephalogram. However, when the patient was given Hebrew to read, a crescendo of spike discharges were promptly precipitated, eventuating in jaw twitching followed by a feeling of warmth and then of being dazed, until finally she was unable to continue the reading.

The Stabilizing Effect of Occupational Therapy on Chronic Psychotics with a Tendency to Aggressive Forms of Behaviour. A. A. Robin. J. Ment. Sc. 103:597-600 (July) 1957 [London].

The author comments on the current tendency to emphasize the physical and pharmacological treatments in patients with chronic psychosis and to overlook the value of more conservative measures. He presents observations on the efficacy of the most conservative of treatments, occupational therapy, in a ward for refractory psychotic patients. The population of the ward remained relatively static; 29 of the 38 patients were in the ward for 3 years, and the number of exchanges in the other 9 beds was small. It was possible to observe the effect of occupational therapy on ward behavior. The information on which this report is based was taken from the ward records retrospectively, and as the study was not planned in advance, the nursing staff could not have been biased in their reports. It was found that occupational therapy had a quieting effect on ward behavior in aggressive patients, which was more marked than that produced by the prescription of tranquillizing agents. The absence of occupational therapy greatly increased the expenditures for sedative drugs, and it is estimated that this increase amounted to more than the salary of an occupational therapist. The author also shows the necessity of standardizing ward conditions when trying new drugs in patients with chronic psychosis.

Procyclidine Hydrochloride (Kemadrin) Treatment of Parkinsonism. A. Zier and L. J. Doshay. Neurology 7:485-489 (July) 1957 [Minneapolis].

Procyclidine (1-cyclohexyl-1-phenyl-3-pyrrolidino-1-propanol; Kemadrin) hydrochloride is a spasmolytic agent possessing atropine-like parasympatholytic action, abolishing in rabbits the tremor due to nicotine toxicity, and exhibiting minimal or no effect on blood pressure, heart, respiration, or hematological components. The effects of this drug have been studied in 108 patients with and 8 without Parkinsonism. Of the group with Parkinsonism, 27 had postencephalitic, 36 had iodopathic, and 45 had arteriosclerotic disease. The non-Parkinsonism group included patients with double athetosis, Huntington's chorea, senile tremor, dystonia musculorum deformans, and familial tremor. The ages of the patients ranged from 22 to 75 years, with males predominating (2:1). The methods of administration of procyclidine included substitution in increasing doses as other drugs were gradually withdrawn, addition to the existing regimen, and prompt total substitution.

The criteria for success or failure hinged on the patients' activities of daily life to include items of work, self-care, gait, speech, and alertness and clinical observation. Improvement was registered if one or more of the cardinal symptoms of Parkinsonism showed improvement and continued to do so for a period of 1 month. Patients were considered unimproved if at least one of the basic symptoms was not brought under control by action of the drug. Procyclidine afforded striking results in 6 of the 8 patients with non-Parkinsonian disease, and of these a patient with double athetosis improved to the extent that he was able to discontinue medication within 6 weeks. Of the group with Parkinsonism, 57% responded favorably; 10 patients of the 43% not responding favorably complained that their symptoms were worse. The drug was tolerated better and was of greater benefit in arteriosclerotic than in postencephalitic disease, proving efficient in the control of rigidity, tremor, akinesia, fatigue, weakness, and mental depression. The side-effects were similar to those of other anti-Parkinsonism drugs, diminishing in number and intensity as the administration of the drug was continued, and there were no serious reactions reported. The addition of Cogentin to procyclidine is advocated in severe rigidity, and the addition of Parsidol to procyclidine in major tremor. Treatment of Parkinsonism will have to be geared more and more to the tolerance of the older age group because the younger patient with Parkinsonism is fast disappearing, the prospect of relief by surgical therapy is remote at best, the older patients are hypersensitive to many drugs, and the multiplicity of severe symptoms accrued in the process of aging.

Two Episodes of Psychosis After Treatment with Isoniazid. K. Waterstradt. Deutsche med. Wchnschr. 82:1138 (July 5) 1957 (In German) [Stuttgart, Germany].

While there have been occasional reports of psychotic reactions after treatment with isonicotinic acid hydrazide (isoniazid), many reports on large numbers of patients treated with this drug do not mention this complication, and investigations on this side-effect of isoniazid yielded negative results. Some investigators believed that a latent predisposition to schizophrenia played a part in the occasional psychotic episode and others observed that manic symptoms subsided immediately after isoniazid therapy was discontinued. Still others ascribed this disturbance to overdosage. A 17-year-old girl was treated with Rimifon, a proprietary preparation of isonicotinic acid hydrazide (isoniazid). She had active pulmonary tuberculosis. After having received isoniazid for 10 days in doses of 5 mg. per kilogram of body weight, she developed motor restlessness, extreme anxiety, and religious delusions. When sedatives proved ineffective, she was transferred to a psychiatric department, where her symptoms were diagnosed as acute psychosis. Two weeks later her condition had become normal. A similar psychotic episode developed several months later after the girl had received another course of treatment with an isoniazid preparation. This time the mania-like psychosis subsided in 10 days. The author believes that a repetition of isoniazid therapy is inadvisable after it has once elicited a psychotic episode, irrespective of whether the cause is an allergy, an intoxication, or a latent psychosis.

GYNECOLOGY & OBSTETRICS

Abdominal Pregnancy. F. P. Zuspan, E. J. Quilligan and J. M. Rosenblum. Am. J. Obst. & Gynec. 74:259-263 (Aug.) 1957 [St. Louis].

Abdominal pregnancy occurred during the years 1951 through 1956 in 11 patients in the Cleveland hospital. The ratio of abdominal pregnancies to total deliveries on the clinic service was 1:782. No abdominal pregnancy occurred on the private service in this period; therefore, the ratio to total patients delivered was 1:1,955. All abdominal pregnancies but one occurred in Negro patients. The average age of this group was 30 years. Six of them were primigravidas. The diagnosis was established in 3 patients during the first trimester, in 3 during the second, and in 5 during the third. The diagnosis was made preoperatively in 8 patients. The symptoms most frequently encountered in these 11 patients were lower abdominal pain, cessation of fetal motion, vaginal bleeding, and vomiting. The physical examination revealed in 5 patients a small cervix that was anteriorly displaced. Seven patients had a small uterus or one not compatible with the length of gestation. Fetal heart tones were absent in all but one patient. Anemia, with less than 9.5 Gm. of hemoglobin per 100 cc. of blood was present in 6 patients, and 3 developed severe hypotension. Immediate laparotomy was the treatment of choice in this series, once the diagnosis was established. Adequate blood replacement prior to operation and the availability of at least 4 units of whole blood at the time of surgery are mandatory. Management of the placenta was necessarily individualized. A marked decrease in morbidity occurred in this group when the placenta was removed during the initial operation. There were no maternal deaths. Only one living child was delivered.

The Use of a Long-acting Estrogenic Hormone Preparation, Estradiol Valerate (Delestrogen), for the Inhibition of Lactation and the Relief of Postpartum Breast Engorgement. G. Rosenblum and B. L. Ginsburg. West. J. Surg. 65:234-238 (July-Aug.) 1957 [Portland, Ore.].

Postpartum engorgement of the mammary glands is a source of great discomfort and annoyance to women who cannot or do not choose to breast-feed their babies. The authors employed various hormone preparations in the management of these symptoms, but only during the last 2 years have they been satisfied with their results. They found that a single intramuscular injection of 10 mg. of a long-acting estrogenic hormone preparation, estradiol-17-beta-n-valerate (Delestrogen), during labor or immediately after delivery inhibited the onset of lactation and prevented mammary engorgement. In the 150 women treated with this preparation no additional measures such as tight breast binders or ice bags were employed, yet 135 (90%) of the women had no evidence of lactation and no uncomfortable breast symptoms; the other 15 had minimal engorgement or leakage of less than 24 hours' duration on approximately the 7th postpartum day. No patient failed to respond to the hormone injection.

There were no undesirable effects (such as uterine bleeding or interference with the resumption of normal cyclic ovarian function) as a result of the Delestrogen therapy in any of the 150 women. The injection was well tolerated by all.

The injection of Delestrogen during labor had no adverse effect upon the subsequent course of the delivery or upon the postpartum period. The optimal response to Delestrogen is achieved when the injection is given during labor or immediately after delivery. When the administration is delayed for several hours or several days after parturition, the hormone therapy is less effective. A single injection of 10 mg. of Delestrogen was not sufficient to suppress milk production in the small number of women who already were lactating; larger doses and repeated injections were not evaluated in these women with established lactation.

The Value of Routine Cervical Smears in the Detection of Incipient Cervical Carcinoma in Pregnant Women. T. A. Slate, P. L. Martin and W. J. Merrit. Am. J. Obst. & Gynec. 74:344-353 (Aug.) 1957 [St. Louis].

From 5,935 pregnant women 45 abnormal smears were screened. The smears of 22 patients were equivocal, in 14 there was probable carcinoma, and in 9 there was definitive evidence of carcinoma. In the group of the 22 patients, 7 became cytologically negative post partum. Among the 14, 4 cases of premalignant dysplasia, 7 of preinvasive carcinoma, and 1 of invasive carcinoma were detected. In the group of 9, 3 had premalignant dysplasia (borderline lesions), 4 had preinvasive carcinoma, and 2 had invasive carcinoma. The evidence obtained indicates that definitive abnormal smears will remain practically the same in the postpartum period and will reveal abnormal or atypical histological findings comparable with the smear with a high degree of accuracy. Abnormal lesions of the cervix during pregnancy, such as premalignant dysplasia and preinvasive carcinoma, are definite pathological changes and will persist with the host if not removed by multiple biopsies or treated during pregnancy. All cervixes showing a lesion grossly suspicious of malignancy should be biopsied to rule out invasive carcinoma.

The Retained Uterine Cervix. M. Cariker and M. B. Dockery. Am. J. Obst. & Gynec. 74:379-391 (Aug.) 1957 [St. Louis].

The retained uterine cervix of 334 patients had been surgically removed or subjected to biopsy. All these women had symptoms referable to the retained cervix which caused them to ask for examination. Carcinoma of the cervix was found in 78 patients (23.5%) and caused death in 28. Carcinomas of stage 3 and 4 and grade 3 squamous-cell epitheliomas were responsible for the largest number of deaths. Adenocarcinoma caused death in 7 of the 14 patients so afflicted. Prolapse of the cervix and vaginal walls were the complaint and findings in 100 patients. Cervical bleeding was the most frequent presenting symptom in both malignant and benign conditions. The vaginal approach was of advantage for more adequate repair of the vaginal wall, although abdominal removal of the cervix was done when pelvic masses and fistulas were present. Owing to the results of this study, a total removal of the uterus is advisable, when hysterectomy is the choice of treatment.

Routine Curettage at Delivery. J. B. Lounsbury. Am. J. Obst. & Gynec. 74:233-240 (Aug.) 1957 [St. Louis].

Routine curettage of the uterus immediately post partum was carried out in 715 patients. This procedure appeared to improve the morbidity rate moderately. Blood loss at delivery was reduced, and 7.8% of the patients were found to have retained tissue at delivery that might have caused later hemorrhage. Postpartum lochia was both lessened and shortened. Subsequent menstruation and fertility were not adversely affected by the procedure, which showed to be not a dangerous one.

Intra-epithelial Carcinoma of the Cervix, 214 Cases, with Emphasis on Investigation by Cytology and Cone Biopsy. H. K. Fidler, D. A. Boyes and D. R. Lock. Canad. M. A. J. 77:79-85 (July 15) 1957 [Toronto].

The authors present their experiences in a cytological screening program for carcinoma of the uterus carried out over a 7-year period in the cytology laboratory of the Vancouver General Hospital. About 10% of the technician-screened material is seen by the pathologist. This comprises all smears considered as positive or suggestive and a certain number of the atypical but presumably benign smears. Patients with positive or suggestive findings are followed up until biopsy material is obtained. All those with negative findings are followed up for 1 year after the examination. Two hundred fourteen patients with intraepithelial carcinoma were discovered during the 7-year period when 41,364 patients were examined, that is, intraepithelial carcinoma was detected in 5.1 per 1,000 patients. The mean age of the patients examined was 43.1 years and the mode 38 years; among those in whom invasive carcinoma was diagnosed the mean age was 52.4 years and the mode 48 years. The incidence of deep gland invasion and microscopic invasive foci increased with increasing age. The fact that no signs or symptoms were present in 31% of the 214 patients with intraepithelial carcinoma proves that the routine use of cytological examination is a most valuable screening method.

Since pathologists in general accept the concept of intraepithelial carcinoma, the authors urge that they cooperate as active members of the team investigating and managing these lesions, particularly those of the cervix. The clinician must rely upon the pathologist, not only for the diagnosis but also for information regarding the extent of involvement and the presence of early invasion. The pathologist should insist on having adequate material upon which to reach a diagnosis. The authors believe that a carefully taken and a meticulously examined cone biopsy specimen is the most important aspect of the investigation of patients in whom the cervical cytological test is positive or suspicious. Careful examination of a cold-knife wide-cone biopsy specimen has the following advantages: The pathologist may be able to decide whether residual disease has been left in the uterus, and he is able to search thoroughly for invasive foci and to study the extent of lymph node and circumferential involvement and is not likely to miss lesions where only a small part of the cervix is involved. With careful sectioning and examination of the tissue, many women will be spared more extensive procedures for treating this disease.

Factors that Might Influence Prognosis in Malignancies of the Vulva. R. E. Cassidy, F. R. Braden and H. T. Cerha. Am. J. Obst. & Gynec. 74:361-367 (Aug.) 1957 [St. Louis].

Radical vulvectomy and bilateral inguinal and deep pelvic lymph node dissection were recommended for 47 patients with invasive malignancy of the vulva. The presence of bone or lung or other distant metastases was the only contraindication. Seven patients were considered inoperable before definitive therapy was carried out. All these patients died within 18 months. Extensive vulvectomy was performed on 3 patients who refused further surgery; these patients are alive and well. Of the 37 patients treated by vulvectomy and node dissection, 23 are living. An attempt was made to correlate the size of the primary lesion with the occurrence of positive lymph node metastases. The authors came to the conclusion that regional lymph node metastasis may be expected in about 14% of the patients if the primary lesion is 3 cm. or less in greatest diameter and in approximately 39% of patients with primary lesions of more than 3 cm. in greatest diameter. No correlation was found between the histological grade of the malignancy and either the presence of node metastases or survival. Epidermoid carcinoma was encountered in 31 of the 37 patients. The prognosis in this series appeared to be the best.

Preclinical Carcinoma of the Cervix. J. P. A. Latour, L. B. Brown and L. A. Turnbull. Am. J. Obst. & Gynec. 74:354-360 (Aug.) 1957 [St. Louis].

From Jan. 1, 1947, to Dec. 31, 1955, there were 154 patients with preclinical cancer, diagnosed by ring biopsy with endocervical curettage and step-sectioning of serial blocks of the biopsy. These were found by cytological screening of clinically negative cervixes. The cancers were classified as carcinoma in situ in 57 patients and as "early invasive" cancer in 97. The patients were successfully treated by a variety of methods. Carcinoma in situ was safely observed only after the minimal treatment which is incidental to ring biopsy or conization combined with endocervical curettage. The conservative management was frequently rewarded by subsequent pregnancies. Of the 57 patients who had carcinoma in situ, all are known to be alive and well. All but one of the 17 who received no definite treatment beyond ring biopsy have remained cytologically negative to date; 4 of these patients have had subsequent pregnancies. Of the 97 patients with "early invasive" cancer, 96 are known to be well; 3 of these received no treatment beyond ring biopsy and endocervical curettage. One patient died of heart disease, with no evidence of recurrence. Of these patients, 40 have been observed 5 years or more. The risks of overtreatment appeared to be more serious than the theoretical risks of conservative methods. Total hysterectomy with removal of the vaginal cuff and with preservation of the ovaries appeared to be an adequate treatment for both carcinoma in situ and "early invasive" carcinoma of the cervix.

The Problem of Breast Abscess in the Puerperium. E. L. Sarason and S. Bauman. Surg. Gynec. & Obst. 105:224-228 (Aug.) 1957 [Chicago].

The development of a postpartum breast abscess, constituting a significant percentage of the over-all morbidity associated with the puerperal state, occurs in many communities in the United States and abroad in epidemic proportions. There is evidence that puerperal mastitis occurs almost exclusively in women who are delivered in hospitals as contrasted with the very low incidence of women delivered at home. The presence of milk in the breast provides a favorable environment for the growth of staphylococci. The persistence of a firm mass in the breast, despite the absence of fluctuation, usually connotes a breast abscess requiring surgical drainage. It is common for a breast abscess to be enveloped by a zone of nonsuppurative mastitis, so that the signs of fluctuation cannot be elicited. Whereas only 6% of the mothers harbored penicillin-resistant staphylococci on hospital entry, 35% of the mothers harbored the organisms 1 week later at the time of hospital discharge. Nursing personnel in the nursery and infants had a similarly high percentage (88%) of penicillin-resistant staphylococci in nose and throat cultures. Barber and co-workers concluded that the newborn infants act as carriers in transferring the organism from the nursing personnel to the mothers. If antimicrobial therapy is to prove effective, the breast infection must be recognized in its earliest stages, as no antibacterial agent has yet been discovered which resolves by itself an established abscess. The administration of chloramphenicol in adequate dosage upon recognition of a tender localized mass in the breast occurring in the early puerperium may well obviate later incision and drainage of a breast abscess. Adequate surgical drainage should be instituted without delay, even in the absence of the classic signs of suppuration, i. e. warmth, redness, and fluctuation, in the case of the postpartum abscess discovered several weeks or later in the puerperium.

Combination of Chlorpromazine, Promethazine and Pethidine in Treatment of Eclampsia. B. H. Sheraes. Brit. M. J. 2:75-78 (July 13) 1957 [London].

The main objective of all types of management of late preeclamptic toxemia of pregnancy is to reduce the maternal and fetal mortality. The pathogenesis and etiology not having been established, management of this condition is based on 3 time-honoured principles: prophylaxis, treatment of symptoms, and termination of the pregnancy. The disturbances common to eclampsia are clinically manifested in maternal anoxia through convulsive spasms of the pharynx; in pulmonary edema due to impeded venous return to the failing and decompensated heart; and in cerebral hemorrhage as a terminal stage of extreme hypertension. There is also possible impairment of liver function due to the toxemia and anoxia and of kidney function due to angiospasm and inadequate oxygenation. Treatment of eclampsia is directed toward the restoration of normal function of the maternal heart, lungs, liver, kidneys, and brain and must of necessity include (1) a clear airway and maintenance of a 100% oxygen atmosphere; (2) adequate glycogen replacement; (3) intravenous vitamin adminstration; (4) maintenance of near normal circulatory dynamics; (5) administration of a diuretic (20% hypertonic glucose); and (6) reduction of venous return by conduction nerve block. The all-important, all-absorbing most disturbing symptoms requiring urgent control are the extremes of nervous excitation causing the convulsions and hypertension, both of which are the result of vasospasm.

Chlorpromazine, a phenothiazine derivate, is a vasodepressor and vasodilator in that it reduces the pressor effect of adrenaline, causing a fall in blood pressure. It is an antipyretic, anticonvulsive agent rapidly eliminated by the body, inhibiting salivary secretion, and is consequently advantageous in the management of the unconscious eclamptic patient. It has no deletarious effects on the heart, liver, or kidneys, produces a "dampening" of adverse body reactions, depresses the amount of general anesthetic or sedation required, and eliminates the complication of postanesthetic vomiting. A prolonged and profound sedation can be produced with chlorpromazine in combination with promethazine and pethidine as a lytic cocktail. Inasmuch as immediate as opposed to late delivery, and intrapartum in contradistinction to antepartum eclampsia are associated with a lower mortality, a minimal convulsion-to-delivery interval is imperative. Chlorpromazine in combination with promethazine and pethidine has been proved to be the most suitable means of bringing eclamptic patients under control in such a manner that they can be prepared for delivery in the shortest possible interval (usually 1 to 4 hours). Of the 124 patients treated with this combination, 43 (33%) had recurrence of fits that were substantially different from those experienced prior to treatment in that they consisted of mild twitches of short duration of the face and limbs. Thirty-four patients (27.4%) were delivered by cesarean section with a mortality of 0.9%, none of the deaths being attributed to postoperative shock or hemorrhage. There was a perinatal mortality of 33 infants (26.2%), 10 of whom weighed less than 3 lb. (1,360 Gm.). The maternal mortality with the new concept of treatment is much the same as with the Dieckman method, 8.06% and 9.6% respectively. The perinatal mortality is substantially lower (10%) with the chlorpromazine combination method.

Placental Transmission of the L. E. Factor: Report of Two Cases. G. M. Berlyne, I. A. Short and C. F. H. Vickers. Lancet 2:15-17 (July 6) 1957 [London].

The L. E. cell is a polymorphonuclear leukocyte with a large acidophilic-staining intracytoplasmic inclusion which displaces the nucleus to the periphery of the cell. In up to 90% of patients with systemic lupus erythematosus, large numbers of L. E. cells are demonstrable in preparations of peripheral blood or bone marrow. The L. E.-cell phenomenon, it is suggested, is due to the L. E. factor, which migrates electrophoretically with the gamma globulin fraction of the plasma proteins, reacting with damaged nucleoprotein in the presence of living polymorphonuclear leukocytes to produce the characteristic inclusions of depolymerized desoxyribonucleic acid. Gamma globulins associated with immunity against infection are known to pass the placental barrier, and it was therefore inferred that the gamma globulin associated with the L. E. phenomenon might also pass the placental barrier. The blood of 2 patients with systemic lupus erythematosus in pregnancy, and of their infants after delivery, was examined serially with use of finger-prick technique. There was transmission of the L. E. factor to the infants, L. E. cells being demonstrated in the peripheral blood of both infants after birth, but they could not be found in either infant after the age of 7 weeks. The babies were clinically healthy. Systemic lupus erythematosus complicating pregnancy and inheritance of systemic lupus erythematosus are both rare.

PEDIATRICS

Morgagni-Adams-Stokes Syndrome in Infancy: Synthetic Review and Clinical Contribution. M. Bolletti. Pediatria 65:361-386 (May-June) 1957 (In Italian) [Naples].

The author describes two instances of Morgagni-Adams-Stokes syndrome in 2 children. In one, a 4½-year-old child, the syndrome was observed in the course of rheumatic heart involvement, and in another, a 3-year-old child, in the course of a severe diphtheritic infection. The first child presented an early rheumatic carditis with involvement of conduction causing a total atrioventricular block. Electrocardiography showed severe damage to the myocardium. In this child total atrioventricular dissociation with severe bradycardia was the predominant factor in the mechanism of the Morgagni-Adams-Stokes syndrome.

Transposition of the Aorta and Pulmonary Artery with Pulmonary Stenosis. W. P. Cleland, J. F. Goodwin, R. E. Steiner and M. Zoob. Am. Heart J. 54:10-22 (July) 1957 [St. Louis].

The authors report on 8 children, 5 boys and 3 girls, between the ages of 11 months and 8 years with transposition of the aorta and pulmonary artery and pulmonary stenosis with deficient pulmonary circulation. All patients were undersized, severely handicapped by dyspnea, and intensely cyanosed. The cardiograms showed evidence of gross right ventricular hypertrophy in all patients and evidence of auricular enlargement in 4. On roentgenographic examination the lung fields appeared to be oligemic or showed stippled hilar shadows suggestive of enlarged bronchial arteries in all patients. The left middle third of the cardiac contour was concave in 3 patients, straight in 1, and convex in the remaining 4. Angiocardiography was performed in 5 patients and was valuable in demonstrating the abnormal position of the aorta. It is the most dependable method of differentiating the condition from the tetralogy of Fallot. Suspicion that the condition is not Fallot's tetralogy may be aroused by the finding of a loud single second sound at the "pulmonary area," probably produced by aortic valve closure, which is heard well at the second left intercostal space owing to the anterior position of the transposed aorta.

A subclavian-pulmonary artery anastomosis was performed in 7 patients and an aortopulmonary anastomosis in 1. There was striking improvement in the physical capacity of 4 patients who were followed up for periods ranging from 1 to 2½ years. Three patients died at or soon after the operation; in 1 of them, the subclavian artery was unsuitable for a Blalock anastomosis, and cardiac arrest occurred before the attempted aortopulmonary anastomosis could be completed; in another patient the anastomosis was probably inadequate because of the small size of the subclavian artery; the third death occurred unexpectedly on the second day after an apparently successful subclavian-pulmonary anastomosis and no explanation for this was found on autopsy. Only 1 month has elapsed since operation in the 8th patient, but she has improved. The malformation of transposition of the great vessels with pulmonary stenosis produces a syndrome which can be diagnosed with reasonable accuracy on clinical and angiocardiographic grounds. Treatment by systemic-pulmonary artery anastomosis carries a considerable risk, but it offers a chance of great improvement in severely handicapped patients whose prognosis is otherwise poor.

Acute Ascending Myelitis (Landry's Paralysis) After Vaccination Against Poliomyelitis with Salk Vaccine. E. Uehlinger. Schweiz. med Wchnschr. 87:813-814 (June 29) 1957 (In German) [Basel, Switzerland].

Two days after the second vaccination with Salk vaccine the symptoms of a rapidly progressive acute ascending myelitis (Landry's paralysis) appeared in a 4½-year-old girl. Flaccid paraplegia developed, and the child died 24 hours after the onset of the myelitis with signs of respiratory paralysis. Pathological studies revealed arterial and venous hyperemia of the brain and meninges, a perivascular, chiefly pericapillary, edema with high protein content of the spinal medulla and of the medulla oblongata, a perigangliocytic edema in the anterior horns of the spinal medulla, and some capillary hemorrhages around the central canal. The ganglion cells were well preserved, but, by the interposition of a layer of fluid between vessels and tissues and between ganglion cells and supporting tissue, a barrier was erected against the transport of oxygen from the blood to the cells. The resulting anoxia of the ganglion cells explains their functional failure, and this in turn becomes manifest clinically in the rapidly ascending paralysis, the progressive loss of consciousness, and the fatal coma. Since there was no inflammatory infiltration in either the nerve substance or the spinal meninges, a vaccination poliomyelitis can be ruled out. The ascending myelitis can be explained pathogenetically as an anaphylactic-allergic reaction to the Salk vaccine. Cortisone and antihistaminics are the only therapeutic measures that could be tried in these allergic reactions to vaccine.

Syndrome of the Anterior Spinal Artery. B. Lindquist. Acta paediat. 46:380-386 (July) 1957 (In English) [Uppsala, Sweden].

The author reports on a 6-year-old boy with the classic syndrome of the anterior spinal artery including involvement of both the upper and the lower extremities. Paralysis developed within half an hour with tetraplegia followed by dissociated anesthesia and loss of bladder and bowel function. A striking feature of the clinical aspect of the patient was the acute and dramatic onset of symptoms. This suggested a vascular lesion as the cause of the syndrome, possibly because of trauma, since just before the onset the boy was playing in a barn by himself. The spread of the symptoms suggested that the lesion was located at the level of the lowermost cervical and uppermost thoracic segments of the spinal cord, where it involved mainly the anterior part of the medulla. The patient improved slowly. The gross functional power of the arms was good with the exception of the hands, the strength of which was severely impaired. Twelve months after the onset the patient was able to walk on crutches and for short distances with a walking stick only. Considerable improvement was noted in the function of the bladder and bowel, so that he had become continent. The lesions of the hands appeared to be irreversible and a certain degree of permanent invalidism must, therefore, be expected. This is apparently the first report of the classic syndrome of the anterior spinal artery in a child.

Atrial Septal Defect in Children. J. Wagner and G. R. Graham. Brit. Heart J. 19:318-326 (July) 1957 [London].

Of 1,500 patients who were regularly followed in the congenital heart clinic of a children's hospital, 133 were found to have an atrial septal defect without other congenital cardiac abnormalities. In about 25% of the 133 patients the diagnosis was confirmed by cardiac catheterization. All the patients were followed over a period of several years. From the history, x-ray findings, and electrocardiograms a composite profile of the child with atrial septal defect may be constructed. This anomaly often gives rise to serious symptoms and disabilities which commonly appear in childhood. Growth is usually slightly retarded, with a striking deficit in weight. Breathlessness is common, and chest infections frequently occur. The heart is usually slightly enlarged. The pulmonary second sound is loud and split, the second component being accentuated. A systolic murmur is easily heard, loudest in the second or third left interspace. A soft apical diastolic murmur is common. The electrocardiogram often shows incomplete or complete right bundle-branch block, right ventricular hypertrophy, or both. Roentgenograms of the chest reveal right ventricular enlargement, prominent pulmonary conus, large pulsatile pulmonary arteries, and increased vascularity of the lung fields. The presence of pulmonary hypertension and the size of the interatrial shunt can often be suspected from the radiologic appearance.

There was a lack of correlation between presenting and subsequent symptoms on one hand and objective evidence of cardiac disease on the other. The symptoms, therefore, cannot be used as a reliable index of the disturbed circulatory dynamics. It is often left to radiologic examination to provide the first objective clue to the harmful consequences of an interatrial shunt.

Resection of Pulmonary Lesions Associated with Cystic Fibrosis of the Pancreas. L. L. Kulczycki, J. M. Craig and H. Shwachman. New England J. Med. 257:203-208 (Aug. 1) 1957 [Boston].

Although the majority of patients with cystic fibrosis have a combination of pulmonary and gastrointestinal symptoms by the time they are one year of age, a significant number are observed in older age groups, in whom bronchiectasis, recurrent pneumonia, or asthma may be the presenting complaint, with little or no gastrointestinal or nutritional disturbances. Six patients with cystic fibrosis of the pancreas are described. The 2 youngest patients are of particular interest because the diagnosis was made in early infancy and the therapy was aimed at this condition. Lobar atelectasis involving the right middle lobe was detected in each case and persisted in spite of numerous attempts to correct this condition. Surgery was accordingly performed when these infants were 16 and 22 months of age. Their present condition is satisfactory. The appearance of lobar atelectasis in small babies with cystic fibrosis affects the prognosis unfavorably, and it was believed that surgical removal was justified under these circumstances.

The 4 other patients had bronchiectatic changes involving either the left or the right lower lobe. In 2 patients the diagnosis of cystic fibrosis was made 14 and 18 months after the operation. These operations were performed at a time when diagnostic tests for cystic fibrosis were difficult to carry out and the frequency with which bronchiectasis occurs in children with cystic fibrosis was not generally appreciated. In view of the readily available procedures for the diagnosis of cystic fibrosis, it is important to raise this diagnostic possibility in any child in whom surgery for bronchiectasis is contemplated. The simple-imprint chloride method is a convenient method of pointing to the diagnosis. If this test proves positive the authors feel more secure in confirming the diagnosis by the sweat test, in which the concentration of sodium and chloride is determined in body sweat, or by a study of the duodenal fluid, or both.

The Incidence of Infantile Pyloric Stenosis. Z. Laron and L. M. Horne. A. M. A. J. Dis. Child. 94:151-154 (Aug.) 1957 [Chicago].

The authors reviewed the records of all but 2 cases of congenital hypertrophic pyloric stenosis proved by operation or autopsy in infants whose parents were residents of Pittsburgh and some of its adjacent areas. Records of infants with pyloric stenosis were found in 11 of the hospitals of the area surveyed over the 11 years from 1945 to 1955. During this period, there were 127,025 white live births with 152 cases of congenital pyloric stenosis among these babies. Calculating the incidence for each year separately, there is a range varying from 0.055% to 0.175%. The mean value for the 11 years is 0.12%, with a standard deviation of ± 0.048. Expressed differently, this gives an over-all incidence of 1 case per 836 live-born white babies. During the same period of time, there were 22,806 Negro live births, with 11 cases of congenital pyloric stenosis among them. The mean incidence was 0.048%, or 1 case in every 2,073 live Negro births. This difference in incidence between white and Negro babies is statistically significant.

The authors were able to find in the literature only 5 surveys which report the incidence of congenital hypertrophic pyloric stenosis per number of live births for a given area. Wallgren found an incidence of 0.4% in Sweden. Two separate studies registered a frequency of 0.3% in England. In Scotland the incidence was found to be 0.15%. A fifth survey, coming from Israel, reports an incidence of 0.05%. Most pediatric textbooks mention the rarity of congenital hypertrophic pyloric stenosis among Negroes. The etiology of pyloric stenosis in early infancy is not clarified. The authors believe that genetic differences could account for the findings mentioned. Further studies of this kind in other parts of the United States and other countries might help explain the difference in incidence of infantile pyloric stenosis in various parts of the world and in different populations. Such findings may be a necessary link in the understanding of the etiology of this disease.

Epidemiology, Therapy and Prophylaxis of Interstitial Pneumonia in Nursing Infants. S. von Berlin-Helmendahl and O. Goetz. Ztschr. Kinderh. 79:680-726, No. 6, 1957 (In German) [Berlin].

The authors report on 328 nursing infants with severe interstitial pneumonia and on 51 nursing infants with latent or mild interstitial pneumonia treated at the pediatric clinic of the University of Munich, Germany, between 1941 and 1956. They collected 1,471 additional cases from the literature. Observations made on these 1,850 infants, in whom the diagnosis was established clinically, roentgenologically, and partly by autopsy, suggest that the "preferred occurrence of the disease in the 8th week of life" depends on an external event, namely, on the fact that most of the diseased infants were hospitalized within the first week of life, bringing them into close contact with the causative agent. Late cases, with an onset of the disease after the 8th week of life, may occur, and their occurrence depends not on a long incubation period but on getting into contact with the causative agent at a later time. The incubation period varies from 6 to 8 weeks but may also be shorter (minimum 1 week). It is not certain whether these early cases represent special types of interstitial pneumonia. It seems highly probable that the transmission of the disease occurs by contact and not by air current, as in measles. Interstitial pneumonia is supposed to be contagious not only in the prodromal stage but for at least 4 weeks after it has become manifest. The disease is highly contagious to susceptible persons: a 1-day sojourn in the infectious environment is sufficient to acquire the disease. After the 4th month of life the nursing infants become increasingly immune to interstitial pneumonia and are capable of acquiring their immunity in the course of a subclinical attack (silent immunity). The seasonal peak of the disease in summer should, provisionally, be considered fortuitous. Hospitalization is not indispensable for acquiring the disease.

The death rate is influenced unfavorably by severe associated disease and by an absolutely low weight of the patient at the onset of the disease, i. e., deficient "maturation," but not by a particularly pronounced deficit in weight, i. e., by the degree of an occasionally present dystrophy. Premature birth and a low birth weight as evidence of immaturity, the occurrence of pneumothorax and emphysema, delayed rest in bed because of late diagnosis of the disease in a patient treated at home, and male sex probably influence the death rate. Of 10,101 nursing infants who were admitted to hospital and who came in contact with the causative agent, 8.2% acquired the disease. Of 1,291 immature infants who reached the 4th week of life, 28% acquired the disease. "Preinfections," i. e., inflammatory signs in the upper respiratory tract, were observed before the onset of typical interstitial pneumonia in 63% of the infants.

Forty-two per cent of the untreated infants died; 31% of those treated with short-wave diathermy of the thorax died. Fourty-seven per cent treated with antibiotics other than chloramphenicol died. Twenty-three per cent of those treated by x-ray therapy of the chest died as compared to 39% of all those treated by other methods except with chloramphenicol. Only 3 of the 22 infants treated with chloramphenicol died, but a comparative evaluation of the results in this group was not possible, since only 5 were premature and all the others were eutrophic. Prophylactic measures consisted of repeated blood transfusions and administration of penicillin and gamma globulin. Early and repeated administration of gamma globulin every 2 to 3 weeks seemed to exert a favorable influence in preventing a fatal course of the disease. The morbidity was not influenced by prophylactic measures.

Thrombosis of the Inferior Vena Cava in Childhood: Report of a Case. W. D. Liddle Jr. and W. W. Waddell Jr. Virginia M. Month. 84:354-357 (July) 1957 [Richmond].

Most of the naturally occurring cases of thrombosis of the inferior vena cava are rapidly fatal either because of the causative agent, such as a tumor or the overwhelming infection, or because of the inability to develop sufficient collateral circulation. Typical physical findings include edematous legs with dilated compensatory veins arising below the level of the obstruction and coursing over the flanks to the thorax. The single patient described showed minor liver function alteration. A diagnosis of cellulitis and thrombophlebitis was made during hospital stay when the patient was 17 months old. Attacks of grand mal epilepsy followed discharge, and at this time dilated veins appeared on the child's abdomen and chest. Venograms indicated utilization of the vertebral system, the intercostal veins, and the azygos and no evidence of flow through the inferior vena cava. The patient was rehospitalized for mild thrombophlebitis, considered to have been secondary to venous stasis, which was relieved with rest, elevation, and bandaging of the limb. Excellent results have always been obtained in surgical ligation of the inferior vena cava, although no known attempt has ever been made to remove a thrombus once established.

Unilateral Anomaly of the Renal Artery in a Child as a Cause of Hypertension. P. Royer. Rev. españ. pediat. 13:337-345 (May-June) 1957 (In Spanish) [Saragossa, Spain].

Cases of unilateral renal lesions causing malignant arterial hypertension in a child are rare. The author knows of 33 such cases and adds 5 observations of his own. The systolic pressure was 20 to 25 cm. Hg and the diastolic was 15 to 18 cm. Hg. Eye examination revealed a severe retinopathy with filiform arteries crossing the veins. Clinical examination and urinalysis help little in establishing the diagnosis of lesions of the renal artery. Functional examination sometimes shows albuminuria, but usually the results are normal. Urography and tomography sometimes show a small kidney connected with the anomalous artery. The best diagnostic aid is renal arteriography (aortoarteriography). Lesions of the renal artery can also be detected during operation by exploration of the renal pedicle. The arteriographic image may show aneurysm, stenosis, compression, and other lesions. Arterial coarctation and bilateral renal insufficiency as causes of maligant arterial hypertension can be eliminated in the differential diagnosis. Less easy to eliminate are pheochromocytoma and panarteritis.

The author performed a nephrectomy in 5 children with malignant hypertension. The lesions of the renal arteries found in these 5 children were compression of the left renal artery by a neurofibroma and arterial thrombosis in one; congenital aneurysm of the renal artery of the right kidney in one and of the left in another; and stenosis of the renal artery of the right kidney and of the left in the remaining 2 children.

Haemolytic Disease of the Newborn Due to ABO Isoimmunization. M. Sabin and L. Lowenstein. Canad. M. A. J. 77:92-97 (July 15) 1957 [Toronto].

The clinical and laboratory features and the management of 17 newborn infants with hemolytic disease due to group ABO incompatibility observed at the Royal Victoria Montreal Maternity Hospital between 1951 and 1955 are detailed. They were observed among 16,621 deliveries. Fourteen mothers were multiparas and 3 were primagravidas. It is noteworthy that all 17 of the babies were of group A and that all the mothers were of Group O. Fifteen of the mothers were Rh-positive, while 16 babies were Rh-positive. The remainder were Rh-negative. The blood group of the fathers was available in only 2 cases, and both were Group A, Rh-positive. The diagnosis of ABO incompatibility can be made more easily on clinical grounds than on the basis of laboratory tests, although only the latter can provide an accurate confirmation of the clinical impression. The most useful diagnostic criteria in the present investigation were observation of icterus within 24 hours of birth and the blood groups of the baby and the mother. Prenatal grouping of the mothers' blood to determine not only those who are Rh-negative but also those belonging to group O alerts the clinician to the possibility of hemolytic disease due to ABO isoimmunization. The diagnosis is further facilitated by grouping the cord blood of all babies whose mothers are group O.

The possibility of hemolytic disease due to the rarer blood group antigens, such as the Kell and CW factors, can be ruled out with the aid of the Coombs test, which is strongly positive with the rare blood groups in contrast to the negative or weakly positive reaction found in hemolytic disease due to ABO isoimmunization. Exchange transfusion is the only important treatment in this disease, and a decision as to its use must be made promptly. The hemolysis is due to the A (or B) antibodies present in the plasma of group O mothers. Since A antibodies are present in the infant's circulation at birth, transfused blood must be group O whose red blood cells are not affected by A antibodies. Exchange transfusions were given to 9 of the 17 infants. There were no fetal or neonatal deaths, and no kernicterus was observed in any of the children. The pediatric follow-up obtained in 13 children disclosed a good late prognosis. The incidence of ABO incompatibility is increasing. Three cases were reported at the Royal Victoria Montreal Maternity Hospital in 1954, an incidence of about 1 in 1,000. In 1955 the incidence was 1 in 300, with 11 cases in 3,329 deliveries. Hemolytic disease due to Rh incompatibility, however, was still more than twice as common during 1955. The detected incidence of hemolytic disease of the newborn due to ABO incompatibility may be expected to increase as awareness of the disease becomes more widespread and as hematological diagnostic techniques become more precise.

Oxalosis: A New Metabolic Disease of the "Storage" Type. G. DeToni, P. Durand and C. Rosso. Minerva pediat. 9:623-637 (June) 1957 (In Italian) [Turin, Italy].

The authors report on an 11⅓-year-old child, a dwarf, with ichthyosis, horse-shoe kidney, and nephrocalcinosis, combined with several biochemical and functional signs characteristic of classic renal insufficiency, hyperchloremic renal acidosis, and severely impaired ammoniogenesis. The child did not respond to any of the various treatments and died after a progressive worsening of the symptoms of renal failure. The diagnosis of oxalosis was made on the basis of the histochemical examination, which revealed crystals of calcium oxalate in the kidneys and in the cartilage of the bones.

Hiatus Hernia in Children. H. Engberg, G. Thomsen and J. Vesterdal. Acta paediat. 46:371-379 (July) 1957 (In English) [Uppsala, Sweden].

The authors report on 63 children with hiatus hernia. The disease was diagnosed radiologically before the age of 10 years in 60 patients. Three patients had characteristic symptoms from birth, but the roentgen diagnosis was not made until after the age of 10 years. Five children had a paraesophageal hiatus hernia and 58 had a sliding hernia. Thirty-four children were operated on and 29 were treated conservatively. Some of the surgically treated patients were operated on twice because of recurrence of the hernia, so that a total of 45 operations was performed. Thirteen of the patients operated on were less than 1 year old, 17 were between the ages of 2 and 3 years, 7 were between the ages of 4 and 6 years, and 8 were between the ages of 12 and 22 years. Herniotomy was performed in 39 patients. A left phrenicotomy was performed in 3 young infants, and gastroesophageal resection was performed in 3 patients with congenital short esophagus. Nineteen patients operated on were cured and 15 were not. Eight of the 15 patients had a hernia or stenosis at the follow-up examination but were almost free of symptoms, and 7 still presented symptoms of the disease.

The choice of treatment should be made according to the following principles. Small infants with sliding hernias should be treated conservatively, since esophageal changes are seldom present at this early stage. This will allow complete recovery in many patients. Children between the ages of 2 and 6 years with sliding hernia but without abnormal changes in the esophagus should be subjected to a herniotomy in order to prevent the occurrence of these changes. Most patients with sliding hernias associated with esophageal changes cannot be treated successfully by a simple herniotomy, and this is especially true in those with stenosis. An esophageal resection is a major procedure and carries a rather high mortality. Children with stenosis may do well if properly cared for. Resection should be postponed as long as possible and be carried out only if conservative measures definitely fail. All patients with paraesophageal hiatus hernia require operative treatment. These hernias are generally large and may compress neighboring organs in the thorax, or else the herniated part of the stomach may incarcerate, or an ulcer may develop.

Intrinsic (Nonallergic) Bronchial Asthma as a Manifestation of Fibrocystic Disease of the Pancreas. V. J. Derbes, J. H. Dent and R. White Jr. J. Allergy 28:287-291 (July) 1957 [St. Louis].

Fibrocystic disease of the pancreas (mucoviscidosis) may be accompanied by meconium ileus in the newborn and by chronic bronchopneumonia in older infants. Repeated, rather severe bouts of respiratory tract infection appear early in this disease, and as the child grows older the frequency of such infections, which may be accompanied by asthmatic symptoms, increases. Intrinsic bronchial asthma is a symptom complex of cough, dyspnea, and wheezing brought on by bronchospasm, bronchial mucosal edema, tenacious sputum, and infections of the respiratory tract. The authors observed these signs of asthma in 33 of 68 patients with fibrocystic disease of the pancreas. They emphasize that this disease should be considered whenever bronchial asthma is a conspicuous feature in young children.

Is the Fetus Damaged by Poliomyelitis During Pregnancy? G. Töndury. Schweiz med. Wchnschr. 87:809-812 (June 29) 1957 (In German) [Basel, Switzerland].

The author investigated the possibility of damage to the fetus when poliomyelitis develops in a pregnant woman by histological studies on 3 fetuses. In the mother of the first fetus poliomyelitis had developed on the 109th day after the last menstruation, and the fetus had been expelled 8 days later.

In the mother of the second fetus the pregnancy had advanced to the 12th week when paralytic poliomyelitis developed. It was decided to interrupt the pregnancy because it was feared that the virus might damage the fetus. The mother of the third fetus had been pregnant for about 80 days when the symptoms of poliomyelitis developed. A dead fetus was delivered about 3 weeks before the estimated term. It had been ascertained that the virus of poliomyelitis circulates in the blood a short time before and for some hours after the appearance of poliomyelitis. It had also been demonstrated that poliomyelitis viruses are not exclusively neurotropic but rather pantropic. It appeared possible that, like the rubeola virus, they might penetrate the intact chorionic epithelium and enter the fetal blood stream. Embryonic tissue is an excellent nutrient medium for viruses. A number of viruses have been successfully transmitted to the embryonal disk of chicks, and in doing this, it was found that the sequels of such transplantation depend not so much on the type of virus as on the reactivity of the embryonal tissue; very young embryos are more susceptible than older ones and rapidly proliferating embryos more susceptible than slowly growing tissues.

Two of the fetuses showed damage to the brain, in the form of diapedesis, pyknosis of cells, local edema, and gliocytic reaction (appearance of so-called rod cells); these changes were attributed to the invasion of the noxious substance. A leukocytic reaction was absent; therefore, one could not speak of "encephalitis." In addition to these changes, severe damage to the lens was observed in one fetus, while the other had microphthalmia with possible damage to the lens and changes in the cornea. The generalized trophic failure in this fetus, which was stillborn 3 weeks before the expected term, indicates damage to the entire embryo. Observations on these 3 fetuses were published in order to reemphasize the importance of virus infection in pregnant women and to stimulate more thorough investigations on the aborted fetuses. One should abandon the idea that a virus disease in the embryo takes the same course as it does after birth. While embryos of less than 7 months may become infected, they will not show an inflammatory reaction. A virus infection during the early fetal period may be without sequels or may cause death of the cell, but during the early phase of development (organogenesis) there is a general susceptibility of all tissues with a predilection for the purely epithelial organs such as brain, lens, and ear. During the more advanced stages of development a specific sensitivity of certain tissues gradually becomes evident, while at the same time the fetus becomes capable of responding to the infection with inflammatory manifestations.

THERAPEUTICS

Micrococcal Bacteremia Without Endocarditis: Clinical Data and Therapeutic Considerations in 109 Cases. A. Schirger, W. J. Martin and D. R. Nichols. Ann. Int. Med. 47:39-48 (July) 1957 [Lancaster, Pa.].

Infections caused by Micrococcus pyogenes var. aureus (Staphylococcus pyogenes aureus) continue to offer a major therapeutic challenge. Micrococci possess an almost singular ability to demonstrate progressive resistance to new antibacterial agents. Experiences at the Mayo Clinic with bacteremia without endocarditis produced by gram-negative and some gram-positive organisms have been described recently. The present study reviews experiences in patients who had bacteremia without endocarditis caused by M. pyogenes. A study was made of the records in 109 cases of micrococcic bacteremia without endocarditis encountered at the Mayo Clinic during a period of 16½ years. The bacteremia was associated with an underlying disease or followed operation in 95 of these cases. The most common surgical procedure to be followed by micrococcic bacteremia was transurethral prostatic resection. A variety of sulfonamides and antibiotics were used in treatment. A total of 72 of these patients recovered from the bacteremia. Despite an increase in the incidence of strains of micrococci resistant to multiple antibiotics, the results of treatment of this condition with appropriate antibiotic agents usually have been satisfactory unless serious underlying disease has been present. No antibiotic represents a panacea for micrococcic bacteremia.

Massive Penicillin Therapy for Meningococcal and Pneumococcal Meningitis in Childhood. F. K. Friederiszick and E. Hoffecker. German M. Month. 2:216-219 (July) 1957 (In English) [Stuttgart, Germany].

Although the sulfonamides have brought about a radical fall in the mortality and marked reduction of sequelae in cerebrospinal fever, they have not measurably affected the prognosis of pneumococcic meningitis to any appreciable extent. Both meningococci and pneumococci are penicillin sensitive. Any unsatisfactory result in early penicillin therapy may well be ascribed to the fact that the dosage employed, though sufficient to produce therapeutic blood levels, was not large enough to ensure that adequate amounts of the antibiotic penetrated the blood-brain barrier. Some measure of the success with intrathecal penicillin therapy in both penumococcic and meningococcic infection is overshadowed by the risk entailed in complications ranging from mild meningeal irritation to near fatal neurotoxic incidents. A concentration in the amount of 0.03 to 0.1 units per cubic centimeter of cerebrospinal fluid is bacteriostatic, a concentration in the amount of 0.1 to 0.5 units per cubic centimeter being bactericidal. Massive doses of penicillin are capable of penetrating the blood-brain barrier to the extent that the bactericidal concentration can be detected in the cerebrospinal fluid. Inasmuch as the cerebrospinal fluid level is only a fraction of the blood level, an extremely high penicillin blood level must be maintained in order to insure an adequate level in the cerebrospinal fluid. This is particularly true in the latter stages of therapy, for the prevention of relapse where failure to maintain these levels is the principal reason for the so-called incomplete cure.

The high massive dosage essential for bactericidal concentrations is unusually well tolerated in the water-soluble state, preferably in the form of crystalline potassium or sodium salts of penicillin G. Dosage is variable, depending for the most part on body surface area, as infants require 1 mega unit per kilogram of body weight per day, while older children require only 500,000 units per kilogram per day. A total of 34 children with cerebrospinal fever ranging in age from 2 to 42 months were treated with massive doses of penicillin and, with few exceptions, with sulfonamides. There were 2 deaths in this series, both due to fulminating Waterhouse-Friderichsen syndrome. During the same period 12 children with pneumococcic meningitis were treated with massive doses of penicillin, one of the children dying on the day of admission, another affecting a partial recovery with residual spastic paresis of the lower extremities and mental retardation, and the remaining 10 recovering completely without residual effects.

Clinical Experience with an Ethyleneimine Quinone (E39) in the Chemotherapy of Diffused Neoplasia. S. Di Pietro. Riforma med. 71:608-615 (June 1) 1957 (In Italian) [Naples].

A group of 23 patients with neoplasia was subjected to treatment with an ethyleneimine quinone (E 39). Twelve patients had carcinoma, 4 sarcoma, 3 lymphosarcoma, 1 reticulosarcoma, 2 lymphogranuloma, and 1 chronic lymphatic leukemia. The patients were given a dose of 5 mg. which was increased to 10 mg. and after 10 to 20 days to 20 mg.; some of the patients received eventually a dose of 30 mg. per day. Tolerance was good in all patients. Local intolerance evidenced by sclerosis or thrombosis of the vein was observed in some. A reduction in the number of red blood corpuscles was observed after the treatment in all of the patients. A reduction of 5,000 leukocytes per cubic millimeter was observed in two-thirds of the patients. Leukopenia developed in all. The drug had no effect on the mass of the tumor or on the metastases of patients with carcinoma. Marked regression of the metastases was noticed in 1 patient with sarcoma after 45 days of treatment; the metastases disappeared after a period of 2 months. Another patient with sarcoma died because of hemorrhage. The drug had a beneficial effect on the subjective condition of the remaining 2 patients with sarcoma. Very good results were obtained in 2 of the 3 patients with lymphosarcoma. A marked regression of the neoplastic adenopathy was observed in the patient with reticulosarcoma, the patient was subsequently subjected to roentgen therapy and was in satisfactory condition 4 months after the treatment. The drug had some but temporary beneficial effect on the 2 patients with lymphogranuloma and no effect on the patient with lymphatic leukemia. Serious toxic effects of the drug were not observed.

Glutethimide Poisoning: A Report of Four Fatal Cases. A. J. McBay and G. G. Katsas. New England J. Med. 257:97-100 (July 18) 1957 [Boston].

Four cases of glutethimide (Doriden) poisoning are reported. Doriden (2-ethyl-2-phenylglutarimide) has become a popular nonbarbiturate sedative. Pulmonary congestion and edema noted at autopsy were associated with intra-alveolar hemorrhages in 2 patients. A massive hemorrhagic infarct of the right adrenal gland was found in one. One patient was unconscious for 27 hours, and bronchopneumonia developed before he died. Abundant urine was found in the bladder of all patients. A considerable amount of reddish-tan precipitate was present in the urine. The free form of the metabolite in the urine was about 10 to 30% of the conjugated form. The levels of the total metabolite were 24, 34, 42 and 48 mg. per 100 ml. in these 4 fatal cases. An additional patient, who recovered after ingesting 8.5 Gm. of glutethimide, had a total metabolite level of 15 mg. per 100 ml. The total metabolite in the urine reached maximum levels of 7.5 and 10 mg. per 100 ml. in 2 patients who were given 1-Gm. doses of the drug. Three decedents were known to have had available 12, 15 and 50 Gm. of the drug. The letal dose for man appears to be from 10 to 20 Gm. of glutethimide.

Fulminant Necrotic Colitis from Use of Antibiotics: Clinicopathological Study of 5 Cases. E. Nador and L. H. Camara-Lopes. Rev. paulista med. 50:332-342 (May) 1957 (In Portuguese) [São Paulo, Brazil].

Almost all the antibiotics in common use, but especially broad-spectrum antibiotics, have been reported in the literature as frequent causes of the development of a fulminant choleriform syndrome leading to shock. In none of the reported cases has the complication been related to overdose of the antibiotics. The early symptoms appear suddenly within 3 or 7 days of administration of antibiotics.

They consist of acute diarrhea of watery stools with blood and with necrotic matter, high fever, abdominal pain, vomiting, rectal tenesmus, and a burning sensation in the rectum during defecation. Dehydration of the patient rapidly follows. The syndrome can be controlled at this stage by immediate withdrawal of the antibiotic and rehydration of the patient. This is accomplished by phleboclysis in doses of one liter per hour, for 12 or 15 consecutive hours. Continuation of the antibiotic treatment results in rapid aggravation of the syndrome, acute toxemia, and shock. The authors report 5 cases of fulminant necrotic colitis from administration of different antibiotics. The choleriform syndrome with typical symptoms followed a rapid course to final shock Diagnosis was made by autopsy. The pathological changes in the colon were the same in all 5 cases, showing diffuse fibrinous pseudopolypous necrotic colitis. The histological changes consisted of necrosis of the mucosa, infiltration of the mucosal lamina propia with lymphocytes and plasmocytes, and hyaline thrombosis of the arterioles and capillaries of the superficial layers of the mucosa. The authors believe that antibiotics either kill the saprophytes of the intestine and favor the development of bacteria resistent to antibiotics or transform the intestinal saprophytes into pathogenetic strains resistent to antibiotics.

Mechanism of Adrenal Atrophy in Cushing's Syndrome Due to Adrenal Tumor. L. H. Kyle, R. J. Meyer and J. J. Canary. New England J. Med. 257:57-61 (July 11) 1957 [Boston].

Atrophy of the contralateral adrenal gland is a characteristic feature of Cushing's syndrome due to an adrenal tumor. Before the development of effective replacement therapy this complication resulted in a formidable mortality after removal of the tumor. Therapy now available renders survival possible, and thus provides an opportunity to study the mechanism of compensatory adrenal atrophy and to evaluate methods for its correction. Although this type of adrenal hypofunction is relatively infrequent it is of major importance because the adrenal atrophy associated with cortical-hormone therapy is caused by similar if not identical mechanisms. Corticogenic adrenal atrophy can be effectively reversed by administration of corticotropin. This fact has engendered the belief that the use of corticotropin will cause permanent reactivation of the adrenal glands after corticoid suppression and may even prevent the occurrence of adrenal atrophy when the hormone is given during cortisone therapy.

Study of 2 patients with compensatory adrenal atrophy due to an adrenal tumor raises some doubt regarding this view. In 1 patient, despite moderate adrenal reactivation with corticotropin soon after the operation and apparently normal adrenal function during pregancy in the second postoperative year, hypoadrenalism persisted until corticotropin stimulation was given for the third time, 2 years after the operation. In the other patient, the features of hypoadrenalism were more intense. The atrophic adrenal gland was repeatedly stimulated with corticotropin, but on each occasion hypoadrenalism rapidly recurred after cessation of exogenous stimulation. These studies indicate that, although the adrenal atrophy may be reversed by corticotropin, this reversal is not maintained, apparently because of a severe and prolonged inhibition of endogenous corticotropin production.

Treatment of Adams-Stokes Attacks and Disturbances of Cardiac Conduction with Isopropylarterenol. F. Schaub, M. Holzmann and S. Wyss. Schweiz. med. Wchnschr. 87:938-946 (July 13) 1957 (In German) [Basel, Switzerland].

The Adams-Stokes syndrome represents a complex therapeutic problem because of its various causes. The acute disturbance of cardiac function which causes the attacks of unconsciousness is of either adynamic (hypodynamic) type due to complete cardiac arrest or of hyperdynamic type due to ventricular tachycardia. The carotid sinus syndrome belongs to the adynamic (hypodynamic) type of the syndrome. Twelve patients with carotid sinus syndrome and 11 patients with Adams-Stokes syndrome were treated with isopropylarterenol. Two proprietary preparations of the drug, Aleudrin and Isuprel (the sulfate of isopropylarterenol) were used. One or 2 tablets of 10 or 15 mg. of Isuprel or 1 or 2 tablets of 20 mg. of Aleudrin were given 4 to 6 times daily by the sublingual route. The drug prevented the occurrence of heart block in 6 of the 12 patients with carotid sinus syndrome and reduced the period of cardiac arrest in 5 to a duration of no danger to the patient. The drug also caused the simultaneous occurrence of substitute beats originating in the atrioventricular node. A positive influence exerted on the sinus frequency was evident. The attacks of unconsciousness disappeared in 10 of the 11 patients with Adams-Stokes syndrome and occurred only rarely in 1 patient.

The effect of the drug consists in an improvement of the general conductivity, in a diminution or correction of the atrioventricular block, and particularly in stimulation and stabilization of the autonomic centers. In contrast to other epinephrine derivatives, the isopropylarterenol does not lead to the ventricular extrasystoles, extrasystolic tachycardia, and prefibrillatory states. The dosage varied considerably in different situations and with the individual patients. A maintenance dose of half a tablet or 1 tablet twice a day was sufficient occasionally, but other patients required 1 tablet 7 times a day for several months. Side-effects consisted of palpitation, restlessness, tremor, or anxiety, but they were not severe, not even with prolonged treatment. It seems advisable to start the treatment with small but frequent doses, i. e., half a tablet (10 mg. of Aleudrin or 5 mg. of Isuprel) 3 to 6 times daily, or to combine the administration of isopropylarterenol with that of a sedative. As a rule the effect of the drug does not diminish, but when it does large doses become necessary and the drug should then be reversed for acute attacks. Because of the simplicity of administration, the drug appears to be one of choice in the treatment of frequent Adams-Stokes attacks and in the prophylaxis of the more rare attacks. The drug may be used successfully even in Adams-Stokes attacks due to ventricular tachycardia.

Combined Intra-arterial Therapy of Lesions Caused by Peripheral Arterial Disease: Influence of Preventive Administration of Hydergine on the Effect of Other Drugs. U. Becattini and E. Scarselli. Minerva cardioangiol. 5:188-191 (March) 1957 (In Italian) [Turin, Italy].

Ten patients, 46 to 74 years old, with various lesions caused by peripheral arterial disease were given intra-arterial injections of Hydergine followed by injection of some other drug indicated for the type of lesion present. A needle was introduced into the artery near the lesion and hydergine was injected. As soon as the effect of hydergine had become apparent another syringe containing the drug indicated for the lesion was attached to the first needle and the drug was injected. Complete healing of the lesion was observed in 4 patients and marked local improvement in the other 6.

Treatment of Adrenal Cortical Insufficiency. J. D. N. Nabarro and G. Walker. Brit. M. J. 2:17-19 (July 6) 1957 [London].

The maintenance of sodium balance in patients with adrenal cortical insufficiency is attempted through the use of deoxycortone and deoxycortone trimethyl acetate. An important practical advance in salt-retaining steroids is the fluorine substituted 9 α-fluorohydrocortisone whose sodium-retaining power is increased more than 100 times and whose glucocorticoid activity is 20 times that of the parent compound. Patients who have had a total adrenalectomy and those with severe Addison's disease can be maintained on 37.5 mg. of cortisone per day, administered in evenly spaced 12.5-mg. doses, because of its rapid absorption and conjugation after oral administration. Patients unable to maintain sodium balance show signs of weakness and weight loss—effects which may be masked by cortisone dosage of the order of 50 mg. per day—and reduced blood pressure, but a rise in the blood urea and plasma potassium levels is a more significant indication of this disorder. Salt dosage was increased (6 to 9 Gm. of extra salt per day) in patients with sodium depletion, dosage in excess of this amount leading to troublesome thirst and polyuria. Inability of the patient to correct moderate salt depletion is adequate indication for 9 α-fluorohydrocortisone treatment. Five of the 9 patients with Addison's disease and 4 of the 30 patients with total adrenalectomy required sodium-retaining steroids in addition to cortisone, these same patients being able to stop taking extra salt when the fluorhydrocortisone was given. Findings in these patients support the tenet that cortisone acetate in "physiological" amounts (25 to 37.5 mg. per day) is suitable replacement therapy for patients with chronic adrenal cortical insufficiency. The importance of regular biochemical examination for detection of sodium deficiency is emphasized. The patients were given cards, similar to those carried by diabetics, stating that the bearer had undergone a total adrenalectomy and must have regular replacement therapy.

First Field Trial of 377 C 54, a New Antimalarial Compound. L. J. Bruce-Chwatt and L. J. Charles. Brit. M. J. 2:23-26 (July 6) 1957 [London].

Mass chemotherapy of malaria with drugs available at the present time is hampered by the possibility of development of resistant strains to the otherwise excellent protective drugs such as proguanil and pyrimethamine and the fact that all available antimalarials are rapidly excreted and have little "carryover" value. The ideal antimalarial combines the virtues of prophylaxis, suppression, rapid and complete curative action, sporontocidal effect and inability to create parasitic resistance, absence of toxic effects, slow excretion, and low cost. The method of trial was based on the selection of 2 groups of African schoolchildren naturally infected with malaria. The predominant parasite species was Plasmodium falciparum (96.5%). P. malaria was present in association with P. falciparum (2 to 32.2%) and P. ovale occurred infrequently (2.1%). The disappearance of parasitemia was complete in series 1 (single doses) only for the 300 mg. dosage group. In the 200-mg. dose group the clearance was 88.6% successful and in the 100 mg. group 47.7% successful. In series 2 (double doses) all 3 regimens of 377 C 54 resulted in total clearance, as did the single 100-mg. dose of chloroquine. No change was apparent in the control group, as the parasite level (100%) remained the same throughout the investigation. The clearance times for 377 C 54 in the 200-mg. and 300-mg. doses was significantly higher (P greater than 0.001) than for chloroquine at 100 mg. Clearance rate values with single doses of the new drug and chloroquine indicate that 377 C 54 is approximately one-half to one-third as active on P. falciparum as chloroquine. Save for the single doses of 100 and 200 mg. the clearance time is in direct proportion to the amount of drug dosage. A rapid rate of reappearance of parasitemia indicated that 377 C 54 is a quick-acting, rapidly excreted antimalarial. No evidence was disclosed of any direct gametocytocidal or sporontocidal action on P. falciparum. The drug has a pronounced schizontocidal effect on P. falciparum, P. malaria, and P. ovale and is well tolerated in a dosage of 30 mg. per kilogram given within 48 hours.

Acute Tetanus Treated with Hibernation and Serotherapy. M. Diaz Cano and M. S. Riveros. Prensa méd. argent. 44:716-720 (March 15) 1957 (In Spanish) [Buenos Aires].

A patient presented symptoms of acute, generalized tetanus 23 days after sustaining an injury to his leg. Antitetanic serum and penicillin therapy were of no avail, and his temperature rose sharply. The authors resorted to hibernation. They administered intramuscularly antitetanic serum, penicillin, and promethazine for several days. A solution of dextrose, a physiological solution of vitamin B_1, diethazine hydrochloride (Diparcol), and pyridoxine were given intravenously. Two blood transfusions were given. The patient recovered.

Another patient presented symptoms of acute, generalized tetanus 7 days after his hand was injured. He was admitted to the hospital 3 days later. The authors used the same therapy. The hibernation therapy was discontinued 3 days later, because it seemed that the attack was over. However, tachypnea and tachycardia occurred and the temperature rose to 41 C (105.8 F). Hibernation was reinstituted, this time with different drugs (such as magnesium and sparteine sulfate, dimenhydrinate) to avoid resistance. The body temperature fell to 36.5 C (97.7 F). Refrigeration was applied. Heart failure developed, and the patient died on the 8th hospital day. A hepatorenal syndrome was probably the cause. The authors stress the following features of this case: the injury was closer to the superior nervous centers than in the previous patient, and there was a shorter incubation time, an increase in the urea level, and resistance to hibernation. Earlier treatment, with wider experience with hibernation and better technique and equipment would have probably been successful.

Technique of Intravenous Infusion Therapy with PAS-Streptomycinpantothenate in Tuberculosis. E. Kuntz. Beitr. Klin. Tuberk. 117:259-264 (No. 2) 1957 (In German) [Berlin].

Experience with and the results of 2,500 intravenous continuous infusions with aminosalicylic acid (PAS) and streptomycin in patients with all forms of tuberculosis are presented. The toxicity of streptomycin was reduced by pantothenic acid. The technique of infusion is more effective, although somewhat complicated. Gastrointestinal disturbances caused by the disease itself are not aggravated by aminosalicylic acid preparations, which frequently have an extremely disagreeable taste. The elimination of inaccurate oral administration of antituberculostatic agents concerning time and dose is emphasized, as well as the patient's individual capacity of absorption. The precise amount of the drug required is introduced directly into the blood. The level of dihydrostreptomycin-pantothenate thus obtained is increased for 10 to 15 hours above the level required for bacteriostasis of extracellular tubercle bacilli and for those in the concentration areas, which act on intracellular tubercle bacilli. The rhythm of growth of tubercle bacilli is about 5 to 15 hours, and an effective growth hindrance may, therefore, be obtained by a sufficiently high tuberculostatic concentration only during the phase of growth. The bed rest for hours required by this technique is a favorable factor which should not be underestimated. A heparin preparation (Thrombocid) combined with the local application of ointments and arm baths containing heparin is recommended for prophylaxis of thrombosis when intravenous infusions are used.

PATHOLOGY

The Histology of Generalized Pulmonary Emphysema: I. The Genesis of the Early Centrolobular Lesion: Focal Emphysema. K. H. McLean. Australasian Ann. Med. 6:124-140 (May) 1957 [Sydney, Australia].

The histological appearances of structural changes in air passages in the early lesions of generalized pulmonary emphysema are presented. The earliest lesions were found in respiratory bronchioles and alveolar ducts near the middle of secondary lobules; one form was an acute lesion associated with bronchiolar obstruction proximally, whereas the other was "chronic," with no evidence of recent change or obstruction. The chronic form evolved either toward diffuse emphysema or toward macroscopically visible focal emphysema in which sharply localized dilated air spaces occupy the middle of the lobule. A hypothesis of origin of these early subclinical lesions rests on 2 propositions: first, that distending forces exist in patent air passages beyond an obstruction (particularly in those just distal to such an obstruction) and that these forces have a disruptive effect; second, that obliteration of bronchioles, due to past inflammation, occurs diffusely and extensively in emphysema, even in these early examples. Both phenomena have been shown to be closely related to acute bronchiolitis, so that the disease is regarded as a sequel of repeated incidents of acute bronchiolitis, progressing more rapidly when such incidents are severe or prolonged.

This hypothesis is consistent not only with pathological observations on the emphysematous lung but also with morphological, clinical, and physiological observations concerning the evolution of inflammatory disease of the bronchioles. Concurrently, the nature of the black pigment of the lung and its relation to focal emphysema were examined. It was concluded that, in most cases, part of this pigment is endogenous hemosiderin derived largely from the hemoglobin of cells found in the exudate in acutely inflamed respiratory bronchioles and branches. Evidence that part is carbon rests on less conclusive evidence, although it is not denied that inhaled carbon can contribute to this pigmentation. Excessive retention of carbon or hemosiderin in the peripheral passages was considered to result in accentuation of the focal form of emphysema.

The Arterial Bed of the Lung in Pulmonary Hypertension. D. S. Short. Lancet. 2:12-15 (July 6) 1957 [London].

A rise in pulmonary arterial pressure complicates several common diseases, notably, mitral stenosis, certain congenital cardiovascular defects, and chronic lung disease; it may also follow repeated pulmonary embolism or it may be found alone. Although it is agreed that there is an increased resistance to the blood flow through the arterioles and small arteries of the lung, the point that is disputed is the nature of this increased resistance. The majority of workers regard the basic disorder as a widespread vasoconstriction on which, in most cases, there ultimately develops structural disease, but some regard the structural disease as the basic lesion. This question has an important bearing not only on prognosis and treatment but also on the search for the ultimate cause of pulmonary hypertension. The extent of the structural changes cannot be accurately determined by examining random histological sections, for arteries are sometimes occluded for short distances only and appear normal in sections taken above and below the point of obstruction. To display the entire pulmonary arterial bed, it was decided to study lungs from patients with pulmonary hypertension by postmortem arteriography.

Sixty-six lungs were studied by a combination of arteriography and histological examination. Thirty-two were from patients with pulmonary hypertension, including mitral stenosis, congenital heart disease, chronic lung disease, recurrent pulmonary embolism and solitary pulmonary hypertension. In every case of pulmonary hypertension there was a great reduction in the pulmonary arterial bed. In addition to thrombosis in the larger arteries, 2 forms of peripheral arterial narrowing were recognized. One was intimal proliferation, in which thrombosis with subsequent organization probably played a part. The other was diffuse arterial contracture, a state of persistent organic narrowing and indistensibility. Intimal proliferation has long been recognized, though its extent has been underestimated; but arterial contracture has been mistaken for hypertrophy because the contracted arteries have thick walls. Structural changes in the lung arteries in pulmonary hypertension are far more extensive than has been supposed. They are of the greatest importance in maintaining the hypertension and are responsible for its serious prognosis and resistance to treatment.

Breast Carcinoma with Multiple Sites of Origin. R. E. Qualheim and E. A. Gall. Cancer 10:460-468 (May-June) 1957 [Philadelphia].

The authors describe their studies on surgically resected specimens of breast carcinoma. They prepared whole-organ paraffin sections from 157 breasts removed surgically for carcinoma. The studies were concerned with the histological nature of the presenting tumor and the accompanying neoplastic alterations in the remainder of the breast. In 29% of the grossly manifest carcinomas the histological pattern varied in different portions of the tumor, suggesting the coalescence of 2 or more tumors. Multiple independent cancers, usually of microscopic size and often of preinvasive nature, were encountered in 54% of the specimens. The multiple tumors appeared in the quadrant containing the presenting cancer and in other quadrants as well. Arguments are presented to support the belief that breast carcinoma frequently arises in many independent foci simultaneously and that the clinically manifest lesion may be merely an indication of a more diffuse breast involvement.

Incidence of Tuberculosis Among Workers in Medical Laboratories. D. D. Reid. Brit. M. J. 2:10-14 (July 6) 1957 [London].

Among the 4,824 persons employed in hospitals or public health laboratories during the 5-year report interval, 151 cases of tuberculous infection were reported. Of this number 96 were selected and form the basis of this report, 55 cases having been excluded from the analysis. A detailed comparison of observation and expectation at the national notification rates in the 2 sexes at all ages in each grade level within the laboratory staff reveals a higher incidence of disabling pulmonary tuberculosis among male workers, pathologists, junior and student technicians, and autopsy attendants. Women pathologists, student technicians, and cleaners fare in a similar manner to their male counterparts, as compared with women in the country as a whole. Although overlapping of laboratory tasks makes a precise comparison impossible, handling by male personnel of autopsy material from either animal or human sources is associated with rapid rate of reappearance of parasitemia indicated that 377 C 54 is a quick-acting, rapidly excreted antimalarial. No evidence was disclosed of any direct gametocytocidal or sporontocidal action on P. falciparum. The drug has a pronounced schizontocidal effect on P. falciparum, P. malaria, and P. ovale and is well tolerated in a dosage of 30 mg. per kilogram given within 48 hours.

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function, especially in the presence of cylindrical bronchiectases, was also observed in the bronchograms made during inspiration and expiration. These lesions were evidently reversible. In the upper lobes in particular there were stenotic large bronchi which did not produce functional disturbance. Stenosis of the bronchi in the lower lobes was progressive and produced pulmonary atelectasis and bronchiectasis more frequently than stenosis of the bronchi in the upper lobes. As a rule, the bronchograms were found to be very sensitive indicators of bronchial changes, but they also revealed functional changes in the bronchi which could not be regarded as comparable to organic changes concerning prognosis or treatment.

X-ray Therapy as a Possible Cause of the Shoulder-Hand Syndrome. R. A. Gagliardi, P. D. Gelbach and B. B. Wells. J. Am. Geriatrics Soc. 5:582-585 (June) 1957 [Baltimore].

Beginning with causalgia a large number of similar clinical entities have been recognized. These have in common musculoskeletal pain, nonpitting edema, and later muscular atrophy and osteoporosis. The generic term "reflex sympathetic dystrophy" has been accepted. The shoulder-hand syndrome was recognized as a member of this group by Steinbrocker in 1947. The authors here call attention to the possibility that roentgen therapy of the shoulder, even in small doses, may be a primary factor in the development of the shoulder-hand syndrome. Although their suggestion is a tentative one, they feel that their experience is sufficiently striking that others should be alerted to its possible complications. Three patients are described, in each of whom the shoulder-hand syndrome appeared from 3 to 4 weeks after roentgen ray treatment for peritendinitis calcarea at the shoulder. The vascular changes that follow roentgen therapy even in small dermatological doses may be an important intermediate factor. One may also speculate that many apparent failures in the roentgen therapy of peritendinitis calcarea are in fact complications of the treatment.

Acute Renal Failure After Aortography. A. D. Roy. Lancet 2:16-17 (July 6) 1957 [London].

The risks of aortography were recognized when sodium iodide was used as the contrast medium, but with the introduction of the organic iodides the method became safer. Renal damage still occurs, as is proved by the severe renal damage that developed in the patient reported by the author. The large hydronephrotic right kidney was removed after the aortography. The output of urine decreased after the operation until only 3 oz. of urine were passed on the 6th day. As soon as the urinary suppression was noted, the fluid intake was restricted and glucose was given orally; and when it became obvious that the renal damage was severe a polythene catheter was passed up the left saphenous vein to the midthigh and a 50% solution of glucose in water was administered slowly. To each pint of fluid 500 units of heparin was added, and this drip ran for 6 days (7th to the 13th) before the vein became inflamed. A total of 8.4 liters of 50% solution of glucose had been administered through it. This meant an average of 1.4 liters of fluid and 2,800 calories a day; and it is suggested that this is better than intragastric drip.

Cortical necrosis was present in the kidney removed at operation. It is believed that the renal damage was produced by the aortogram. The nephrectomy prejudiced the patient by its effect on protein breakdown, and the blood urea level would probably not have risen so high otherwise, but the nephrectomy did not cause the renal damage. The dose of contrast medium was well within the limits considered to be safe, and the patient gave no evidence of sensitivity to iodine. The nonfunctioning right kidney had a very reduced blood supply; therefore, probably the left kidney received a relatively higher dosage of the contrast medium. While aortography is fairly safe, it can cause renal damage; it should only be used to gain information that cannot be otherwise obtained. Where only one kidney is functioning it is advisable to reduce the dosage of the contrast medium. Any operation after aortography on the renal tract should be delayed for at least 7 days to exclude renal damage.

A Case of Renal Failure Following Renal Angiography. K. M. Dormandy, A. M. Joekes and D. Sutton. Lancet 2:18-19 (July 6) 1957 [London].

The authors observed temporary renal failure following renal aortography in a 42-year-old woman. This is the first such case in a series of some 500 aortograms performed in the diagnostic x-ray department of St. Mary's Hospital, London, in the past 5 years. Thirty-seven cases of various renal complications have been reported since the introduction of organic iodides as contrast medium. The renal complications proved fatal in 7 of the 37 patients, and 6 of these had tubal necrosis. The patient presented had good renal function as evidenced by the intravenous pyelogram and other clinical tests; the dose of contrast medium used was relatively low; and was not injected at excessive pressure. As a result of this experience, the authors have reduced the dose per injection to a maximum of 20 ml. of 70% diodone or 70% sodium acetrizoate whenever a high proportion of the test dose enters the renal arteries. Only in exceptional cases, and where renal function is good, are second injections now made, and the maximum dose is then cut down to 15 ml. The authors are also using lower concentrations of contrast medium by mixing it in various proportions with the newer less toxic mediums.

BOOK REVIEWS

The Diagnosis and Treatment of Pulmonary Tuberculosis. By Paul Dufault, M.D., Medical Director of Rutland State Sanatorium, Massachusetts Department of Public Health, Rutland. With chapter on Pathology by A. Reynolds Crane, M.D., Professor of Pathology, University of Pennsylvania School of Medicine, Philadelphia, and chapter on Pulmonary Function by Oscar Feinsilver, M.D., Senior Visiting Physician at St. Vincent Hospital, Worcester, Mass. Second edition. Cloth. $9. Pp. 426, with 162 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1957.

This compact volume for those interested in the medical and social aspects of tuberculosis contains concise and practical information. The treatment of tuberculosis has changed so radically since the advent of modern drugs that this new textbook is offered as a substitute for the previous volume by Stone and Dufault. The all-important subject of chemotherapy is treated with particular care. Special attention is given to the various surgical procedures perfected in the last decade. The complex subject of evaluating pulmonary function is presented by Feinsilver and should be helpful in current practice. In the chapter on differential diagnosis, most pulmonary conditions resembling pulmonary tuberculosis and often mistaken for it are described with accompanying roentgenograms. The chapter on basic pathology by Crane adds value, and the well-chosen illustrations elucidate the text. The book should prove informative for all who desire ready reference to current information in compact form, but for specialists in this field and for research students it will hardly take the place of the more exhaustive and larger volumes now available.

Physiology of the Nervous System. By E. Geoffrey Walsh, M.A., M.D., M.R.C.P. With chapters on Somatic Sensibility and Applied Physiology of Pain by John Marshall, M.D., M.R.C.P., D.P.M. Cloth. 50 shillings. Pp. 563, with illustrations. Longmans, Green & Company, Inc., 55 Fifth Ave., New York 3; 20 Cranfield Rd., Toronto 16, Canada; West End, 6-7 Clifford St., London, W. 1, England, 1957.

An opening chapter summarizes the fundamental phenomena seen by the physiologist when he cuts and stimulates motor nerves. It analyzes the activities of muscle fibers and of the neuromuscular junction, explains accomodation and strength-duration curves, and applies these concepts to practical problems, such as that of electrophrenic respiration. The remaining chapters deal with somatic sensibility; applied physiology of pain; the spinal cord; posture and the labyrinth; the cerebellum; the cerebral cortex, olfaction, and electroencephalography; the auditory system and temporal lobes; the visual system; cortical control of movement and the corticospinal and extrapyramidal systems; sensory pathways, the thalamus, the parietal lobe, and speech; and the hypothalamus, rhinencephalon, and frontal lobes. The text is well illustrated with diagrams and several good plates. There is a copious bibliography, alphabetically arranged by authors, and a subject index.

Much about this book will remind the reader of Sherrington's "Integrative Action of the Nervous System," which appeared in 1904 and was reprinted as recently as 1948. Students who found Sherrington's book baffling can be assured that Walsh's is much more readable, more concrete, and broader in scope. It is naturally also rendered up to date by inclusion of the data and vocabulary supplied by recent applications of electronics to neurophysiology. Such words as "servo mechanism," "feedback," and "monitoring" occur frequently, and the results of using the cathode-ray oscilloscope are basic everywhere. Some weaknesses which this book shares with many contemporary textbooks are the practice of alluding to things without defining them, the offering of purely collateral or gratuitous information in a form that makes it look like a definition, and the occasional incorrect or misleading use of keywords, such as "homeostasis." Students would also be interested in applications of the theory of proprioception to such normal phenomena as cramps in swimmers, sideaches in runners, and the still unexplained tonodynamic reflex. It would probably also be helpful to have some of the details about the autonomic nervous structures assembled in a section especially devoted to a conspectus of this part of the nervous system. Nevertheless, this book can be recommended heartily to the student seeking a link between the introductory physiology of his preclinical years and the clinical neurology of his later years.

Abdominal Total Hysterectomy. A New Technique: The Posterior Approach. By Frank Musgrove, M.D., M.R.C.O.G., Consultant Gynaecologist to North-East Metropolitan Regional Hospital Board, London. With foreword by W. C. W. Nixon, M.D., F.R.C.S., F.R.C.O.G., Professor of Obstetrics and Gynaecology at University of London, London. Cloth. $2.25. Pp. 32, with 19 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1957.

This monograph describes a new technique of hysterectomy which has been performed by the author 1,000 times without a death and with practically no postoperative morbidity. The operation is a modification based on an appreciation of both pelvic

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These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

anatomy and genital function. It affords a precise anatomic route, conserves the vaginal supports, and enables removal of the uterus with safety to the urinary tract. The special features of this new technique, entailing a systematic posteroanterior approach, include early mobilization of the uterosacral ligaments, preparation of a large peritoneal flap posteriorly, separation of the bladder from the vagina by direct vision over the finger of the operator placed in the vagina through a posterior window therein, ligation of the uterine vessels without the use of clamps, removal of the uterus between a pair of newly designed curved clamps, and shortening of the uterosacral ligaments by attaching them to the vaginal vault as it is closed. The steps of the procedure are described clearly; the operation could be performed by any trained gynecologist who studied the accompanying illustrations, which are lucid without being elaborate.

Several of the advantages claimed by the author for the posterior approach appear to be met equally well, however, by the intrafascial technique of hysterectomy first advocated by Worrall in 1917, modified by Richardson, improved by Farrar, and fashioned by Aldridge into a standard procedure preserving a supporting circle of pericervical fascia. Like the operation advocated in this monograph, the intrafascial procedure provides a methodical anatomic technique, assures the safety of the bladder and ureters, and gives strong support to the vaginal vault postoperatively. The new posterior operation seems to have the advantage of rapid mobilization of the uterus because of the early opening of the vagina, an opening made posteriorly between the ligated and tautly held uterosacral ligaments. The vaginal angle clamps advocated by the author will require trial by others for confirmatory evaluation of their merit. At first glance and from the illustrations, they seem unnecessarily large and cumbersome for their purpose. All those with an interest in gynecology should welcome this easily read monograph.

Surgery of the Anus, Anal Canal and Rectum. By E. S. R. Hughes, M.D., M.S., F.R.C.S., Surgeon to Out-Patients, Royal Melbourne Hospital, Melbourne, Australia. Foreword by C. Naunton Morgan, M.S., F.R.C.S., Surgeon, St. Bartholomew's Hospital, London. Cloth. $10. Pp. 304, with 277 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; E. & S. Livingstone, Ltd., 16 and 17 Teviot Place, Edinburgh, Scotland, 1957.

This well-illustrated, clearly written volume portrays the author's concepts and practice from the standpoint of the general surgeon who has had special training in proctology. The drawings and the photographs are by the author, and the drawings are especially excellent. From a teaching standpoint, however, this work fails to clarify the problems relative to the origin and development of anal abscess and anal fistula, which are confusing to the student and to many practitioners. The author describes and diagrams anal glands, yet states that in most cases there is no obvious cause of anorectal suppuration. He then adds to the reader's confusion by describing, at one point, a fistulous tract passing from the anal canal to the perianal skin, while at another point he indicates that the tract passes from the perianal skin to the anal canal. The surgeon must, however, understand thoroughly the pathogenesis of a fistula in order properly to plan his surgical attack.

Despite this weakness, the book is filled with practical points relating to surgical anatomy, pathology, symptoms, diagnosis, and management, both conservative and surgical, of anorectal disorders. The author reports great success in the use of "skin cover" to facilitate the healing of large wounds in anal skin. In the chapter on carcinoma of the rectum, the reader will find a remarkably clear and well-illustrated portrayal of the synchronous combined abdominoperineal proctosigmoidectomy. As Mr. Morgan says in the foreward, the book is "garnished by historical illustrations." These and the historical appendix are interesting and informative. This book is recommended to students, residents, and surgeons who wish to improve their results in the field of anorectal surgery.

Hypophysectomy. Edited by O. H. Pearson, M.D., F.A.C.P., Associate Professor of Medicine, Cornell University Medical College, New York. Publication number 315, American Lecture Series, monograph in Bannerstone Division of American Lectures on Tumors. Edited by David A. Karnofsky, M.D., Associate Professor of Medicine, Cornell University Medical College. Cloth. $5. Pp. 154. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1957.

This symposium is a collection of discussions by 24 participants in a conference on hypophysectomy and its effects, which was held at the Sloan-Kettering Institute in 1956. These participants included surgeons and internists from Memorial Center, New York, the Karolinska Institute, Stockholm, the Massachusetts General Hospital, and other institutions where hypophysectomies have been performed as a palliative measure in patients with cancer or severe diabetes. Observations on such patients have yielded much information not only regarding the effects of this procedure on the growth of human neoplasms and on the diabetic process but also on the physiological effects of hypophysectomy. Included also is a chapter on radiation hypophysectomy. The discussions by the various participants are included, and this detracts from the volume's value as a textbook, but all who are interested in this experimental procedure should gain much from a perusal of the experiences of those who have pioneered in this field, and should particularly gain from the discussions and questions which follow each presentation. A tears may be stimulated by subcutaneous injection of parasympathomimetic drugs (Mecholyl, 3 mg. administered subcutaneously to children, or Prostigmin, 0.25 mg. administered subcutaneously) in the same dosage as for normal controls. For instillation into the conjunctival cul-de-sac for temporary relief, a number of commercial artificial tears are available.

CHRONIC DEGENERATION OF THE BRAIN

To the Editor:—*A 48-year-old man has been admitted to the hospital with chronic brain degeneration. He has worked in an old chemical plant which before the war made formaldehyde and which during World War II changed to making wood alcohol (methanol). Working conditions have been primitive, and the men had no safety devices; they only wore rubber boots while stirring the vats of alcohol with big wooden ladles. The neurological examination of this patient has revealed extensive degenerative disease of the nervous system, which would fit in the Alzheimer category of presenile sclerosis. Could exposure to formaldehyde or wood-alcohol fumes cause a degenerative disease of the nervous system?*

C. A. Hellwig, M.D., Halstead, Kan.

Answer.—Despite extensive experience with formaldehyde exposure in industry, no cases of chronic central nervous system damage have been recorded. It is very unlikely that formaldehyde inhalation would produce a picture of presenile cerebral degeneration and organic psychosis.

Vascular congestion, petechial hemorrhage, and degenerative changes in the meninges, brain, and spinal cord have been described in animals experimentally exposed to lethal doses of methanol. Similar changes in the central nervous system have been described in man, following acute intoxication and death from methanol ingestion. However, no cases with a clinical syndrome resembling Alzheimer's disease have been described; nor have there been cases of progressive brain degeneration after cessation of exposure. Retinitis or optic neuritis and peripheral neuritis have been the prominent nervous system changes in nearly all reported cases of industrial methanol intoxication. These most frequently followed episodes of recognizable acute or subacute intoxication.

The relationship of the exposure to methanol and the onset and progression of symptoms in this case are not clear. The brief description of the working conditions would suggest that the patient's exposure was high. However, in view of the absence of reports of other cases resembling Alzheimer's disease in heavily exposed persons, it would be difficult to attribute this patient's disease to his past methanol exposure.

PROCAINE REACTIONS

To the Editor:—*Can a patient develop a reaction to the injection of procaine hydrochloride used in dentistry? What would be the manifestations of such a reaction, and is there any prophylaxis for such reactions?*

M.D., Illinois

This inquiry has been referred to two consultants, whose respective replies follow.—Ed.

Answer.—A patient can develop a reaction to the injection of procaine hydrochloride used in dentistry. The reaction may affect either the central nervous system or the cardiovascular system. Symptoms of nervous system involvement include euphoria, slurred speech, diplopia, lethargy, restlessness, agitation, and convulsions. Cardiovascular effects include bradycardia and fall in blood pressure. Prophylaxis for the central nervous system effects can be partially accomplished by the oral administration of a rapidly acting barbiturate 30 to 45 minutes before the injection of procaine. Treatment of a central nervous system reaction is by the intravenous injection of a soluble barbiturate, such as Pentothal Sodium, Nembutal Sodium, or Amytal Sodium. Barbiturates are of no value to protect against or treat the cardiovascular effects of procaine, and this treatment should be directed toward restoration of blood pressure with a suitable vasopressor. Procaine solutions containing high concentrations of epinephrine, 1:50,000 or more, will often give rise to symptoms from the epinephrine that may be confused with procaine reactions. If the symptoms are due to epinephrine, there will usually be a marked increase in blood pressure and pulse rate. If procaine is the causative drug, hypotension and bradycardia will normally occur.

Answer.—Any of the toxic responses to the local anesthetics, as a class, may be seen with the injection of procaine hydrochloride. These may be outlined as follows:

1. Toxic Responses in Normal Individuals
   - (*a*) Central nervous system responses
     - (1) Stimulation
     - (2) Depression
   - (*b*) Peripheral effects
     - (1) Cardiovascular
       - (i) Direct action on heart
       - (ii) Direct action on vascular bed
     - (2) Respiratory tract
2. Abnormal Responses
   - (*a*) Allergic responses
   - (*b*) Hypersensitivity
   - (*c*) Idiosyncrasy
3. Reactions Not Due to Local Anesthetic Agent
   - (*a*) Psychomotor
   - (*b*) Vasopressor

Proper prophylaxis for procaine toxic reactions would consist of the following: obtaining a thorough history to elicit any former untoward reactions to the injection of procaine; use of the lowest concentration of the drug consistent with the operation to be done, as well as the minimal total dose; aspiration on injection to assure extravenous injection; and slow injection by halves to enable cessation of injection if, and immediately when, a reaction happened, thereby sparing the patient the total contemplated amount.

LUPUS ERYTHEMATOSUS AND SUNLIGHT

To the Editor:—*A patient with lupus erythematosus for many years has had lesions primarily on both ears. He has noticed that upon exposure to sunlight, even through window glass, he breaks out in a rash on the exposed area. Does not ordinary window glass filter out ultraviolet rays? Are the ultraviolet or actinic rays of the sun responsible for the adverse effect in this disease?*

Milton Vainder, M.D., Chicago.

Answer.—The cutaneous type of lupus erythematosus (discoid lupus erythematosus) most commonly occurs on the exposed skin surfaces but may also occur in the mucous membrane which is completely shielded from the sun. Thus, the skin lesions are the result of multiple causes. The action spectrums responsible for induction of lesions of lupus erythematosus are not known, since there have not been any studies with monochromatic ultraviolet radiant energy. Ordinary window glass varies in its composition of heavy metals but usually does not allow the passage of wave lengths longer than 3,200 A. Since the wave lengths reaching the earth's surface that induce normal sunburn erythema and tanning are from 3,000 to 3,200 A, it can be stated that ordinary window glass filters the wave lengths inducing sunburn but not the entire ultraviolet spectrum which extends to 3,900 A.

CONGO-RED TEST AND AMYLOIDOSIS

To the Editor:—*Given a patient with amyloidosis in whom the Congo-red test is positive, will successive Congo-red tests be positive, or will the amyloid in the body be so saturated with Congo red that subsequent tests are relatively negative? If the answer to this is "yes," how long must one wait before repeating the test so as to obtain another positive?*

Louis Hirsch, M.D., Tucson, Ariz.

Answer.—There is no categorical answer to the questions posed, because there is not enough definite information available. It appears certain that the amount of amyloid present will influence the results of primary and repeated tests; if relatively small amounts of amyloid are present, the result of the repeated test may be negative. Stemmerman and Auerbach concluded that tests may be repeated with reliable results after one month. Such a repeat test will eliminate false-positive results according to them, while Selikoff definitely advocates repeating the test for diagnostic purposes. The latter's standard for diagnosis requires that two tests be performed, both showing complete or nearly complete absorption. This recommendation is made in spite of the report by Selikoff, with Bernstein, of two deaths which followed repeated tests.

There have been cases of amyloidosis reported in which the amount of dye absorbed on the second test was less than on the first. This may have been due to saturation of the amyloid or to a technical error. In the Bennhold procedure, generally used, the establishment of the standard for the comparison of the one-hour specimen is by no means certain, and errors result from this fact. In the series of Stemmerman and Auerbach there were 24.3% false-negative results and 4.2% false-positive results on a single test, the criterion used being 90 to 100% absorption as a positive result. These facts have an important bearing on the interpretation of repeated tests as well as on the original one. From a practical standpoint, if a patient absorbs 1.2 mg. of Congo red (Paunz criterion) per kilogram of body weight in one hour, he may be considered to have amyloidosis, and repeating the test will add little to the information at hand.

TREATMENT OF CYSTOCELE, RECTOCELE, AND UTERINE PROLAPSE

To the Editor:—*A woman, past 40 years of age, who has had several children, is now seeking relief for a definite cystocele, rectocele, and first-degree prolapse of the uterus. One surgeon believes that all such patients should be treated with a vaginal hysterectomy and a repair of the cystocele and rectocele. Another surgeon believes that these women should have a repair of the cystocele and rectocele, conization of the cervix, dilation and curettage of the uterus, and then, by an abdominal entry, anterior suspension of the uterus, ligation and section of the fallopian tubes, and appendectomy. Please supply expert opinion.*

M.D., New York.

Answer.—From the history given, there is no indication for conization of the cervix, dilation and curettage and suspension of the uterus, or appendectomy. The preferred technique for a patient in this age group with these complaints, who is at the end of her reproductive life, would be vaginal hysterectomy, anterior colporrhaphy, and posterior colpoperineorrhaphy. This procedure not only provides the necessary repair but insures against both future pregnancy and the possibility of carcinoma of the uterus.

As an alternate procedure, if there is objection to sacrificing the uterus, the Manchester plastic procedure may be carried out. In this operation, the chief object is to change the angle between the partially retroverted uterus and the vaginal canal by first amputating the cervix, insuring paracervical fixation, and performing high perineorrhaphy. Repair of the cystocele is optional and only done when there are definite urinary symptoms requiring surgical repair. In the course of the Manchester plastic procedure, when elevating the bladder from the anterior uterine wall, the peritoneum may be opened and tubal sterilization performed, if this procedure is requested.

RECURRENT EROSION OF CORNEA

To the Editor:—*A 60-year-old patient was injured when hit by a wire buffer in the right eye. A small piece of wire penetrated the cornea and caused a local opacification of the lens. The cornea had some rust in it, which was removed as well as possible; a few fine spicules remained. X-ray has revealed no intraocular foreign body. This condition appears to be a filamentary keratitis. The epithelium in the right eye has failed to heal properly. The cornea becomes completely covered on patching of both eyes for three or four days, but as soon as the patch is removed, the cornea is easily abraded. Due to the severe pain in the eye, a retrobulbar injection of alcohol was done two weeks ago; the cornea was rescrubbed with ether; and with bilateral patching the cornea again healed. On uncovering the eye, however, the epithelium had again partially sloughed. What suggestions are made as to treatment of this case?*

M.D., Missouri.

Answer.—From the description of the cornea it appears more likely that one is dealing with a recurrent erosion of the cornea rather than with a filamentary keratitis. Recurrent erosions are commoner with fingernail, newspaper, and twig injuries but may follow any injury to the cornea. The following treatment is suggested: Cauterize the cornea with tincture of iodine; the excess iodine is neutralized with 4% cocaine in 30 to 60 seconds. A binocular pressure dressing is then applied for 48 to 72 hours. At the end of this time the uninjured eye is opened and the affected eye repatched for 48 to 72 hours. This treatment may be repeated one or two times. If there is a further recurrence, a complete tarsorrhaphy should be performed and the union of the lids permitted to remain for one to two months.

SPLENECTOMY

To the Editor:—*What disability would occur in the case of an 8-year-old girl who suffered traumatic injuries to her spleen and had to have a splenectomy?*

O. B. McCoy, M.D., Harrison, Ark.

Answer.—In an experience of more than 35 years with follow-up studies after traumatic rupture of the spleen requiring its removal in otherwise normal individuals, this consultant has never encountered in child or adult any permanent or transitory disability attributable to the absence of this organ. Actually, in many instances there is a somewhat higher than normal level of red blood cells, white blood cells, and platelets maintained for months and sometimes years in the absence of the normal spleen, and infections have been no more frequent and no more severe in such individuals than in others in the same household with spleens intact. Many of these individuals have been followed from childhood to full adult life, and there have been no mental or physical limitations of any kind noted. The same has been true in a large series of therapeutic splenectomies for a variety of hypersplenic dyscrasias.

In the aforementioned series of 35 patients with traumatic rupture of the spleen, with subsequent removal, 10 of whom were under 10 years of age and 25 of whom were 10 years of age and over, there was no single individual in whom tuberculosis, meningitis, or other infections, sometimes mentioned as being particularly virulent in the absence of the spleen, were found to have occurred up to 5 to 10 years after splenectomy. There was only one report of pneumonia developing in one patient, which disease was self-limited and nonfatal. The removal of the normal spleen after traumatic rupture in an 8-year-old child should prove no handicap to her future mental and physical growth, development, and well-being.

BORON GASOLINE

To the Editor:—*A patient has recently been exposed to boron in gasoline. The eruption began as an erythematous pruritic dermatitis involving the exposed surfaces of the forearms and the hands, neck, and face. The patch test to the boron gasoline diluted about 50% revealed a strongly positive (4+) reaction on the flexor surface of the arm. The control test with regular gasoline was essentially negative. Have other cases been reported of sensitization due directly to the gasoline, or has the boron product acted as a sensitizing agent?*

Harold L. Boyer, M.D., Las Vegas, Nev.

Answer.—No specific or relevant information is available as to the probable effects of the boron in certain gasolines upon the skin. In view of the irritant properties of various petroleum hydrocarbons that enter into the composition of gasoline, however, it is highly improbable that the low concentration of the boron component of gasoline was a factor in the dermatitis described in this case. The results of a comparison of boron gasoline with regular gasoline, moreover, by means of patch tests, would not convict the boron component of complicity in the induction of dermatitis, since many components of the boron gasoline, including the petroleum hydrocarbons themselves, differ from those in regular gasoline. It is known (Machle and Zwick: *M. Bull.*

Univ. Cincinnati, 1935) that certain fractions of certain base gasolines have sensitizing properties occasionally, and such fractions are more likely to occur in tailored, high-grade automotive fuels than in gasolines composed largely of ordinary petroleum distillates. In short, gasoline, as a motor fuel, has no predictable or common composition. The terms merely designate a commercial product, the brands and grades of which are highly variable chemically, dependent upon the original sources of the crudes, the methods of processing them, and the blending of stocks into the final product.

PREGNANCY AND RUBELLA

To the Editor:—*A patient, the mother of four children, had rubella (German measles) rather severely for three days. She now states that she has missed her period and is about four to seven days overdue. From what can be determined, she must have been but a few days pregnant when she had the measles; she had recovered before she really missed her period, so that she had the disease between ovulation and the regular day for her period. Inasmuch as one knows the high instance of fetal defect when such a maternal disease is present during the first trimester of pregnancy, could the fetus be involved, or was the pregnancy too early for it to be affected? Would it be advisable to interrupt the pregnancy?*

Delbert C. Schmidt, M.D., Mt. Vernon, Ohio.

Answer.—It is assumed that this patient suffered from rubella. The incidence of congenital malformations is highest when the maternal disease occurs during the first month of pregnancy. One author cites a malformation frequency of 100% when the maternal disease occurs in either the first or the second month of pregnancy. Another author gives the following frequencies: 100% in the first month, 90% in the second month, 70% in the third month, and 35% when the maternal disease occurs in any of the remaining months. When the disease takes place in the first month, the most commonly reported defect is cataracts. Heart lesions, mental deficiency, and microphthalmos have also been reported. Interruption of the pregnancy is indicated in the opinion of this consultant.

PAINFUL BREAST ENLARGEMENT IN A YOUTH

To the Editor:—*What is the cause of sore and swelling breasts in a 15-year-old boy? Should anything be done for this condition, or is time likely to take care of it?*

M.D., Virginia.

Answer.—Painful enlargement of the breasts in a 15-year-old boy is invariably physiological. The common term "puberty mastitis" is a misnomer, but it does call attention to the fact that the condition is associated with puberty, and even though inflammation is not present, the connotation is one of painful enlargement. The breast enlargement may be unilateral or bilateral and often asymmetrical. It may be of short duration or persist for months. There is little hyperplasia of the ducts but considerable periductal fibrous tissue. The cause is unknown; however, it is suggested that excess estrogen secretion by the adrenals or testes is responsible. It is interesting that similar transitory painful breast enlargement was observed in young American prisoners of war after their recovery from starvation. Many had liver disease. Since the liver is responsible for deactivation of estrogens, it is suggested that in these young men excessive circulating estrogens stimulated breast enlargement. Estrogens in the food enhanced the process. Breast enlargement eventually subsided spontaneously. No treatment is indicated for painful breast enlargement in the adolescent male. For psychological reasons the boy should be reassured that the condition is a normal one and that it will disappear in a few months.

HYPERTENSION AND TRAUMA

To the Editor:—*A 50-year-old woman who was in an automobile accident sustained multiple contusions and abrasions, a large hematoma of the left buttock, and a possible cerebral concussion. There were no fractures, and the eyegrounds have been normal. At the time of the accident the systolic blood pressure was 200 mm. Hg and the diastolic pressure was 120 mm. Hg. The blood pressure has remained more or less at these levels since the accident, and there is a continuing complaint of dizziness and headaches. Is it possible for this type of trauma to produce a persistent hypertension such as this patient has?*

M.D., New York.

Answer.—It is well known that emotional and painful episodes raise the blood pressure. The increase usually is in the systolic blood pressure and not the diastolic. An increase in the latter usually takes months or years, and, therefore, it is reasonable to assume that this woman had hypertension prior to the automobile accident. Furthermore, increases in blood pressure resulting from anxiety, such as might occur after an accident, usually are temporary and disappear when the patient calms down.

PREVENTION OF DERMATOPHYTOSIS

To the Editor:—*Are saturated mats of value in the prevention of dermatophytosis (athlete's foot)?*

R. J. Sexton, M.D., Charleston, W. Va.

Answer.—A number of investigators, including the United States Public Health Service, have shown that mycotic infections of the feet are not spread by fungi on the floors. Rather these infections are the result of favorable conditions of growth on the feet, which consist of moist interdigital spaces and epithelial debris. Within the last few years there has appeared on the market a solution of iodine in polyvinylpyrrolidone, which the manufacturers claim is a nonirritant form of iodine that remains as a film on the skin, slowly releasing the iodine over a period of 24 hours. Iodine dissolved in the wetting agents known as Pluronics is likewise said to have the same action. Unpublished experiments with these preparations indicate that they have some value in the prevention and treatment of dermatophytosis, the preventive measure consisting of a foot bath with one of these solutions after the shower bath. The wearing of wooden-soled bathing clogs going to and from and while in the shower bath, the wiping of the feet and interdigital spaces dry, and attention to foot hygiene are the best methods for prevention of dermatophytosis of the feet.

URINE STAINING

To the Editor:—*A 36-year-old man complains that his shorts are stained dark and rust-like from the small amount of urine which accumulates on the shorts after urination. Please outline a course of laboratory or medical investigation to determine the cause of this complaint.*

M.D., Nebraska.

Answer.—To discover the character of urinary staining, examine the urethral stripping, obtain urine specimens in several glasses (first, second, and third) on voiding, and run cultures and microscopic tests of the first voided urine as opposed to the others. This case appears to be chronic prostatitis or chronic urethritis, with possibly some hematin crystals in the urine which stain the shorts.

EXTRASYSTOLIC ARRHYTHMIA

To the Editor:—*A 63-year-old man co[illegible] of annoying extrasystoles from 1:3 to 1:60 [illegible]r the past month. There are no signs of cardiac impairment or shortness of breath. The blood pressure is 125/80 mm. Hg. The pulse rate is 75 to 80 beats per minute. The patient has been smoking the same amount of tobacco for the past 30 years, but there was no change after he stopped smoking for several days. The administration of quinidine sulfate, 3 grains (0.2 Gm.), three times a day has temporarily improved his condition. But is this dosage advisable for prolonged medication?*

W. Scheffler, M.D., Merchantville, N. J.

Answer.—It would appear that this patient has an extrasystolic arrhythmia which is unrelated to organic heart disease; in most cases, the extrasystoles would be occurring from a ventricular focus. In the absence of evidence for organic heart disease, the extrasystoles must be considered functional in origin and of relatively little clinical significance except for their nuisance value. Smoking should be kept at a minimum, and the patient should avoid tension and undue fatigue. A trial of a mild sedative preparation, such as phenobarbital, would be justified prior to instituting therapy with quinidine sulfate. In the event that the symptoms are extremely annoying, the administration of 3 grains (0.2 Gm.) of quinidine sulfate three or four times a day is advised.

"CHOLERA" IN THE NINETEENTH CENTURY

To the Editor:—*What was the nature of the "choler" or "cholera" that attacked so many of the early wagon-train personnel in their cross-country journeys? Was this a form of salmonellosis?*

M.D., California.

Answer.—A satisfactory answer can hardly be given without more exact references as to dates and localities, since the name "cholera" could be used for a variety of diseases. Apart from cholera infantum, the main distinctions made by physicians in the 19th century were cholera nostras, known since antiquity, and Asiatic cholera, which appeared in Europe and the United States in the 19th century. In the chapter on cholera nostras in "Handbook of Geographical and Historical Pathology" (London New Sydenham Society, 1886, vol. 3, p. 372) Hirsch wrote, "In fact it is not unusual in modern times for any severe form of vomiting and purging to be designated as 'cholera.'" However, in the years in which Asiatic cholera was prevalent, the term "cholera" could be expected, above all, to refer to the latter disease. This is especially true in the case of the California gold rush. Harris in "California's Medical Story" (San Francisco, J. W. Stacey, Inc., 1932, p. 79), which may be profitably consulted on details and contemporary literature, states: "Immigrants by sea from Panama as early as 1848 and those crossing the plains in '49 died of cholera [i. e., Asiatic cholera] on the way. But not until 1850 were its ravages marked in California."

ORAL INGESTION OF PLASMA

To the Editor:—*Has there ever been a case of accidental oral ingestion of commercially prepared blood plasma? Could there be any deleterious effects from continued oral ingestion of the same?*

Leon J. Corbin, M.D., Bronx, N. Y.

Answer.—This consultant knows of no cases of accidental oral ingestion of plasma. Oral feeding of plasma has been attempted in children (Loehle: *J. Pediat.* 28:145, 1946). Continued ingestion of blood plasma should be without deleterious effects if the plasma is free of pathogenic viruses or bacteria. Freedom from bacteria may be assumed for commercial plasma in view of the careful bacterial sterility tests routinely applied before release. Hepatitis virus, if present and of the infectious hepatitis (virus A) variety, would be a source of danger by the oral route. Differentiation should be made between commercial liquid plasma, on the one hand, and dried or frozen plasma, on the other. The commonly applied commercial practice of ultraviolet irradiation, followed by immediate freezing and/or drying, cannot be relied upon to eliminate virus B, if present, under all circumstances or, by analogy, virus A. Liquid normal human plasma, treated with ultraviolet irradiation and submitted to six months' storage at room temperature before use, may be considered safe.

TREATMENT OF ACNE

To the Editor:—*A woman, 30 years of age, has acne vulgaris on her face, chest, and back, with the formation of large pustules. She has had a complete physical examination, the findings of which were normal. Local treatment with antibiotics and various other medicaments was entirely unsuccessful. However, 300,000 units of procaine penicillin administered intramuscularly keeps her acne under fairly satisfactory control. She has been receiving daily injections for approximately six months with apparently no untoward effects. Is it harmful to inject 300,000 units of procaine penicillin daily?*

S. M. Lewis, M.D., Ferndale, Mich.

Answer.—The failure of this patient to develop sensitization to penicillin after 150 to 200 daily injections does not establish that the patient will not suffer from this complication later. It is well to remember that the newborn infant has no allergies; these develop as he journeys through life. Unfortunately, sensitivities may manifest themselves at any time even after long-continued exposure. If systemic antibiotic therapy seems to be necessary, a change to a less allergenic, broad-spectrum, orally administered preparation would be advisable. However, more standard dermatological therapy, including sulfur preparations administered locally, dietary control, and, most important, superficial x-ray therapy, would be advised for this patient.

FRONTAL LOBOTOMY AND WORKER EFFECTIVENESS

To the Editor:—*Is it advisable to allow a person who has had a prefrontal lobotomy to assume a position which requires rather extensive knowledge and fine judgment and which directly influences the health, safety, and welfare of others?*

M.D., Indiana.

Answer.—Frontal lobotomy has been refined to a point where personality characteristics are almost always preserved. Intelligence, memory, judgment, and competence remain intact. In some instances, indolence and lack of tact may be noticed on close observation, but they are often offset by lively spirits and sensible acceptance of criticism. In other words, it is the strictly personal attitudes that are most altered. Granting that the psychosis itself did not blunt the fine edge of the patient's capabilities, he is apt to be an even more effective worker precisely because of the reduction in introspection and painful self-consciousness.

CENTRAL AIR CONDITIONING IN A HOSPITAL

To the Editor:—*The question has arisen as to the safety (bacteriologically) of air conditioning a floor of a hospital. It has been suggested that air-borne bacteria might be carried from one room to the other with the use of a central air-conditioning unit. This does not seem feasible in view of the many new hospitals that are being built with central air-conditioning systems. Please supply information regarding this question.*

Mark McD. Lindsey, M.D., Hamlet, N. C.

Answer.—Air conditioning, properly installed and properly maintained, is absolutely safe in any area of a hospital. It is acknowledged that without these proper methods infection may be transmitted throughout the hospital. Among the many measures which may be used to reduce the hazard of air-borne infection are good housekeeping, control of air movement, maintenance of humidity and ventilation, use of sterilizing lamps, application of bactericidal preparations, and filtering of air by either mechanical or electronic devices. An excellent article on "Air Conditioning the Hospital" can be found in *Hospitals*, Journal of the American Hospital Association, for Jan. 1 and Jan. 16, 1957. The article was written by a mechanical engineer with the division of hospital and medical facilities, United States Public Health Service.

TREATMENT OF UTERINE CANCER IN EXTREMELY OBESE PATIENT

To the Editor:—*A patient, 44 years old, weighs 310 lb. (141 kg.). She is reported to have an adenocarcinoma of the uterus as a result of the examination of endometrial tissue removed at a recent dilation and curettage. Routine treatment consists of irradiation to be followed in six weeks by a hysterectomy. Except for obesity, the patient is considered a normal surgical risk. How should the hysterectomy be done—by vaginal or abdominal route and with the patient under spinal or inhalation anesthesia?*

M.D., Michigan.

Answer.—A patient, weighing 310 lb. with a diagnosis of adenocarcinoma of the body of the uterus, in the opinion of this consultant should be treated by radium with a dosage of 6,000 mc.-hr. Ordinarily some surgeons believe in doing a hysterectomy and a bilateral salpingo-oophorectomy after the use of radiation therapy. Since this patient would be a problem for any surgical procedure, either by vaginal or abdominal route, radiation therapy would be sufficient to control her malignancy. She should have radium inserted in the vault of the vagina to sterilize any probable metastasis in this area.

STERCORACEOUS VOMITING

To the Editor:—*An 80-year-old man has been suffering from obstipation for the past two years. He has had two episodes of stercoraceous vomiting within the past six months. His appetite is poor, and he lost 17 lb. (7.7 kg.) in weight in the last 10 months. Physical and laboratory examinations, including repeated gastrointestinal series, are normal. The patient has been taking an aqueous solution containing hydrochloric acid for the past 30 years. He had pneumonia as a child and underwent a prostatectomy 15 years ago; the pathologist reported malignancy. Please suggest a possible diagnosis and treatment.*

M.D., California.

Answer.—Fecal vomiting is usually related to a gastroenteric or gastrocolic fistula or intestinal obstruction. Volvulus may occur in a redundant sigmoid and has, at times, resolved spontaneously or during barium enema. The question arises as to whether the vomiting is truly fecal. If so, the barium studies of the upper and lower digestive tract should be repeated, because bona fide fecal vomiting is almost always attributed to an organic lesion of the digestive tract. The duration of the complaint and the 17-lb. weight loss in the last 10 months strongly suggest such a process. This 80-year-old individual does have a prostatic malignancy and has reached the age where weight loss is not unusual. Continued observation is necessary before a proper diagnosis and subsequent treatment can be rendered.

TREATMENT OF NEVUS FLAMMEUS

To the Editor:—*Please outline the present treatment of nevus flammeus for a young woman. The nevus is on the right forehead, including the right eyelid; diameter is about 10 by 10 cm. What is the most effective and reliable procedure —plastic surgery, plastic planing, or tattooing?*

A. A. Kuna, M.D., Quincy, Ill.

Answer.—The treatment of nevus flammeus has been notoriously unsuccessful. Planing has not proved to be an effective approach. Opinions differ as to the value of excision and grafting in such a large lesion. It is doubtful if the cosmetic result would be satisfactory after such a procedure. Tattooing can be performed but has limitations, including the necessity of multiple treatments, and differences of opinion regarding the final result. Thorium-X or grenz-ray treatments have been successful in lightening these lesions in many cases and would be the recommended therapeutic modality in this instance. Further information can be obtained from the book "Skin Surgery" edited by Epstein (Philadelphia, Lea & Febiger, 1956).

EYE EXPOSURE TO CHLORINE GAS

To the Editor:—*A 24-year-old man had his eyes exposed to chlorine gas for about five minutes. Vision of the right eye is 20/25, correctable to 20/20: vision of the left eye is 5/400, not correctable. The right eye is normal, but the left eye has a deep anterior chamber, with a chorioretinitis area that is about disk size near to but not involving the macula. Discharge papers from the United States Army show that this patient had 20/20 vision in both eyes on his release in 1945. All consultants believe that the chlorine gas exposure could not have caused chorioretinitis and loss of vision. Is it possible, or even probable, that such might occur?*

James M. Hicks, M.D., Brunswick, Ga.

Answer.—With reference to the case of chorioretinitis described, there would seem to be no indication that exposure to chlorine gas is responsible for the condition noted. Chlorine gas is not known to have produced any changes in the internal structure of the eye in either acute or chronic exposure. In the present instance the exposure was brief; the right eye was unaffected; the left eye has shown deep-seated changes but without corresponding evidence of injury to superficial structures. This opinion is based on the consultant's experience of many years with a large number of men exposed to chlorine gas, and nothing suggesting such changes as those described has ever been noted among them.

CORONARY INSUFFICIENCY AND ESTROGEN THERAPY

To the Editor:—*Will it benefit a patient with coronary insufficiency and blood-brain barrier to receive estrogen therapy? This is a patient, 42 years of age, who had a surgical menopause eight years ago, is now obese, and has a family inheritance of coronary thromboses.*

M.D., Florida.

Answer.—Clinical experience does not justify the widespread use of estrogen or estrogen-androgen combination to modify the various syndromes of coronary artery disease. However, in a patient such as this, in whom hormonal imbalance, artificially produced, has been followed by evidence of premature coronary insufficiency, substitution therapy should surely be essayed.

WASHINGTON NEWS

FROM THE WASHINGTON OFFICE OF THE AMERICAN MEDICAL ASSOCIATION

Influenza-like Illnesses Widespread • •

Burney Urges Use of Salk and Asian Influenza Vaccine . .

AEC Advisory Committee Reports on Radiation . .

SURVEY REPORTS ON COLDS AND INFLUENZA

Statistics extracted from National Health Survey information indicate that, in the first week in October, 8,500,000 persons had colds, sore throats, influenza, or similar diseases severe enough to put them in bed for a day or more. On the average day, 2,500,000 were ill.

Surgeon General Burney said "a great many of the cases undoubtedly were Asian influenza," which is now epidemic in many areas.

The information is provisional, based on what interviewers learned from a representative sample of households in the continuing survey, authorized last year by Congress. While the survey is not designed as an epidemic reporting system, the influenza-cold information was obtained by the Public Health Service through a special tabulation of findings from the field.

Dr. Burney pointed out that the survey information adds another dimension to the study of influenza—the amount of time lost because of this and other upper respiratory illnesses.

Meanwhile, PHS elaborated on its recommendations regarding dosages of both the new 400 CCA Asian strain influenza vaccine and the original 200 CCA type. It said:

"1. As the 400 CCA Asian strain influenza vaccine becomes generally available, it is recommended that for those who have not been vaccinated, the new vaccine be used in a single 1.0 cc. dose injected under the skin (subcutaneously), except in young children, for whom two injections between the layers of the skin (intracutaneously), are recommended, given in 0.1 cc. amounts at an interval of a week.

"2. For (*a*) those who have already received a 0.1 cc. dose intracutaneously of the 200 CCA vaccine, and for (*b*) those who have received a 1.0 cc. dose subcutaneously of 200 CCA vaccine, and who are in special risk groups; namely, pregnant women, the aged, and those suffering from certain chronic ailments such as rheumatic heart disease and pulmonary illnesses, it is recommended that a second 1.0 cc. subcutaneous dose of 200 CCA vaccine or ½ a cc. of 400 CCA vaccine be given in not less than two weeks after the first dose.

"3. Physicians may wish to recommend a second injection, as well, for other patients under their care.

"4. Vaccinations should continue to be carried out in communities where influenza has been prevalent for those who have not had the illness."

BURNEY CALLS FOR MORE ASIAN INFLUENZA VACCINATIONS

Surgeon General Leroy Burney says the country should intensify its efforts to see that as many individuals as possible are given protection against the Asian influenza. The head of the Public Health Service made his remarks at the opening of the annual meeting of the Association of State and Territorial Health Officers with Health, Education, and Welfare officials.

Dr. Burney conceded there are "many imperfections in the influenza vaccination program as inevitably there will be in such large scale operations, but preventive medicine has kept better step with the natural forces of the epidemic in this instance than it has ever been able to do in the past." He said at no time had it been claimed that the epidemic could be staved off nor was it claimed that the program was a defense against mortal illness.

"But we are just now beginning to see the more serious attacks occurring in older age groups and other high risk groups which show a higher mortality rate. As the vaccine now becomes more generally available, let us intensify our efforts to see that as many individuals as possible have the benefit of vaccine protection."

Dr. Burney also put in a strong argument for poliomyelitis vaccinations. He declared: "We cannot close this chapter until we know that the 80 million unvaccinated and partially vaccinated persons in the groups under 40 years of age have received protection before the next high-incidence season."

Mrs. Katherine Brownell Oettinger, head of the U. S. Children's Bureau, in her annual report to the health officers, promised that medical interests will be represented in the 1960 White House Conference on Children and Youth, one of which is held every 10 years.

The bureau hopes that the President's advisory committee will be named early next year so that firm planning can get under way, she said.

ADVISORY COMMITTEE REPORTS ON RADIATION

The Atomic Energy Commission's Advisory Committee on Biology and Medicine sides with the AEC over the issue of continuing thermonuclear tests in this country. In a special report signed by the six-man committee, the physicians reached this conclusion:

(Continued on next page)

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Lown, B., and Levine, S. A.:
Current Concepts in Digitalis Therapy, Boston,
Little, Brown & Company, 1954, p. 23, par. 2.

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"If we wish to maintain a first class military organization for the safety of the country, we must at least keep abreast of new weapons developments. No such developments can be carried out successfully without tests. . . . Therefore in terms of national security, necessary tests of nuclear weapons are justified."

But at the same time, the committee raises some caution signals on too many tests and their possible effect on populations. The recommendation in this area: tests be held to a minimum consistent with scientific and military requirements and appropriate steps be taken to correct the present status of confusion on the part of the public.

The doctors noted that radioactive fall-out from U. S. tests spread all over the world and that similarly tests made by others affect this country. "Other countries may want to develop nuclear tests later. In time, the situation may well become serious. Estimates of ultimate damage to the world's present and future population expressed in absolute terms are large and impress many people.

"Judging from discussions in the public press, it is not generally realized that the estimated damage is well within tolerable limits, applicable to radiation exposure of the whole population in its normal peacetime activities. The question arises in the minds of many thoughtful persons whether the number and power of bombs exploded in tests are being kept at the minimum consistent with scientific and military requirements."

The committee estimated the maximum damage to be expected from the annual detonation of atomic explosives equal to 10 million tons of TNT, which is the average for all tests held in the last five years. Examples:

Leukemia—An increase of 160 deaths a year from the present average of 11,400 fatalities, and possibly another 36 deaths each year.

Birth of handicapped children—An increase of 160 to 800 above the present rate of 80,000 a year in the U. S.

Shortening of life—For the average span of life, a few days at the worst.

Bone cancer—Possibly no effects at all in a lifetime.

On the committee are Drs. John C. Bugher, director of medical education and public health, Rockefeller Foundation; Charles H. Burnett, professor of medicine, University of North Carolina; Simeon T. Cantril, director, Tumor Institute of Swedish Hospital, Seattle; H. Bentley Glass, professor of biology, Johns Hopkins University; Shields Warren, pathologist, New England Deaconess Hospital, Boston; and Gioacchino Failla, director, Radiological Research Laboratory, Columbia University, and committee chairman.

RECOMMENDATIONS ON USE OF X-RAYS ON NEWBORN AND PREGNANT WOMEN

Meeting at the invitation of the Children's Bureau, a group of specialists in health fields spent a day discussing advantages and hazards in use of x-rays as a diagnostic tool in care of children and pregnant women. Some of their findings and recommendations:

Too many parents demand x-rays be taken under the mistaken belief that an examination is not complete without it. "Some of our patients now ask for x-rays just as they have been asking doctors for a shot of penicillin for a cold," one physician observed.

The conference agreed the public could help out by not demanding x-rays unless the physician or dentist recommends them.

Use of x-rays in fitting of shoes is a dangerous practice that has been outlawed by a number of states. Other states are considering restrictions.

Taking of x-ray pictures of newborn infants to discover enlargement of the thymus "is no longer considered good medical practice, as this condition is not the cause of trouble it once was thought to be."

The group agreed that the best judgment of the physician should determine whether the x-ray is the proper diagnostic tool to use. Participants noted a general interest among the medical profession in promoting more knowledge and better observation of precautions in the use of x-rays.

Participants included radiologists, pediatricians, obstetricians, dentists, and public health workers. Bureau Chief Katherine Brownell Oettinger presided.

SOCIAL SECURITY ADMINISTRATION SURVEYS WELFARE SPENDING

A survey by the Social Security Administration shows that public spending for social welfare activities is increasing at the same rate as the total national output of goods and services. These activities cost 32.2 billion dollars for the fiscal year 1954-1955 and $34.5 billion the following year.

The increase was attributed to the expanding federal social security program and more state and local spending for education. However, the higher level of spending represented the same proportion of the gross national product as social welfare activities amounted to the previous year—8.6%.

Activities covered by the report include social insurance of all kinds (OASI, railroad retirement, workmen's compensation unemployment insurance), public assistance, public health and medical services, veterans programs, education, and public housing.

Of the 34.5 billion dollars, almost three-fifths or 19.9 billion dollars represented state and local money, and the remainder, 14.6 billion dollars, U. S. spending.

The report is printed in full in the Social Security Bulletin, published by the Social Security Administration.

MISCELLANY

The Food and Drug Administration reports that 30 bakeries have agreed to change labels to eliminate possible misleading references to "buttermilk" as an ingredient of white and enriched bread.

In the last fiscal year, the Red Cross sent whole blood for hospital use into every state in the union. Of the 2,047,000 pints collected from voluntary donors, all but 285,000 were used by hospitals for whole blood transfusions. The remainder was processed into blood derivatives.

A new x-ray film processing unit has been installed at Walter Reed Army Hospital. The machine, completely automatic, makes it possible for x-ray picture to be taken and processed and the picture finished in less than 10 minutes.

The Internal Revenue Service has ruled that a home for the aged that does not accept charity patients and discharges those who fail to pay their bills is not a charitable institution, even though operated on a nonprofit basis. The home in question was denied certain taxation advantages.

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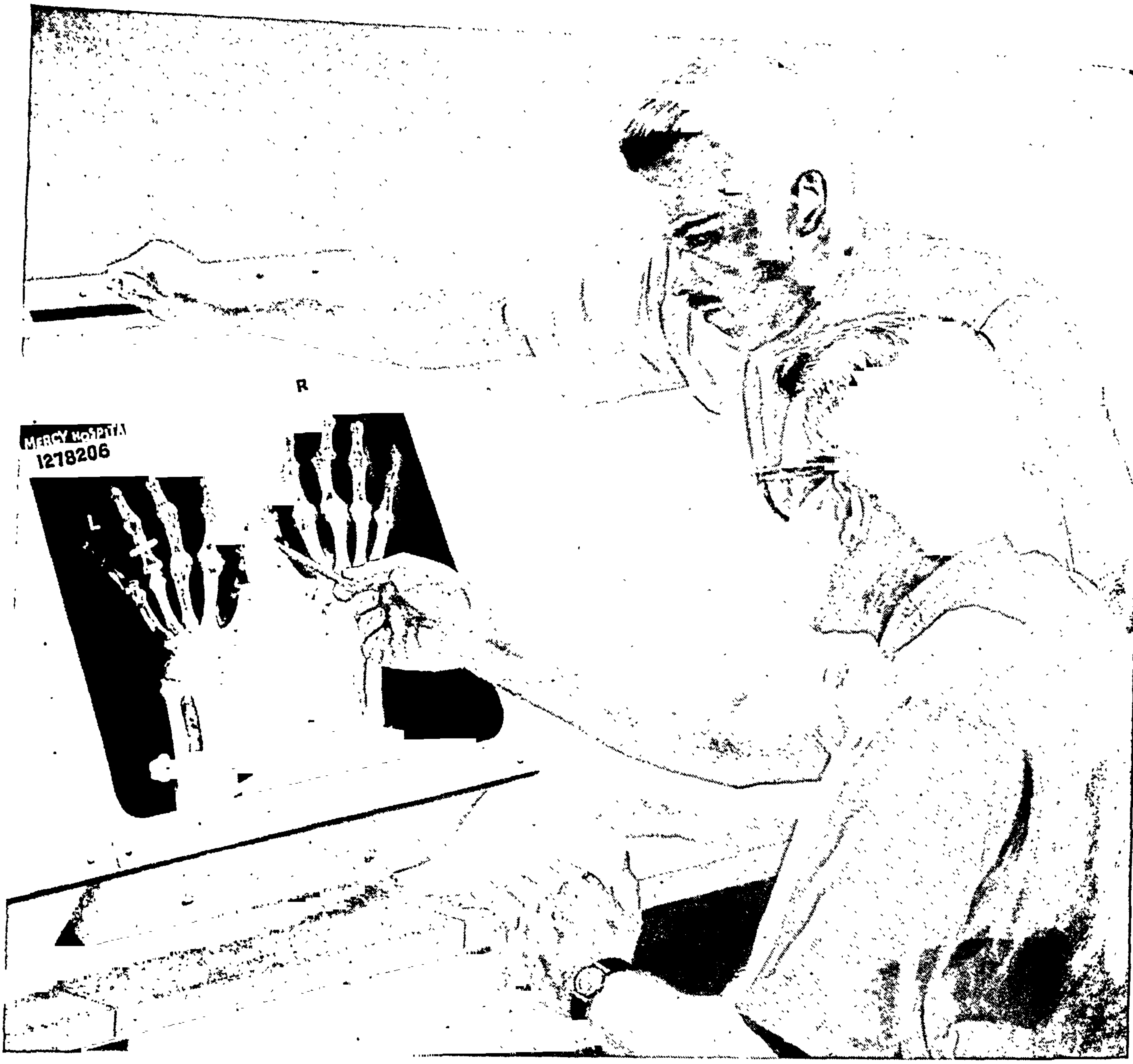

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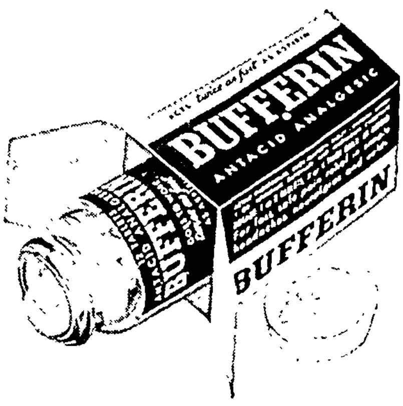

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THE JOURNAL
OF THE
American Medical Association
Published Under the Auspices of the Board of Trustees

VOL. 165, NO. 11
CHICAGO, ILLINOIS
NOVEMBER 16, 1957

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TREATING OVERWEIGHT PATIENTS

George L. Thorpe, M.D., Wichita, Kan.

EXCESS WEIGHT has become a medical problem of increasing importance in recent years. This has been due to a gradual awareness by the public of the influence of weight on disease. The knowledge that a person can accomplish weight reduction without suffering slow starvation, prostrating weakness, agonizing hunger pains, or the cynical remarks of friends has been obscured by psuedoscientific writings in the popular press. These writings are larded with testimonials and advocate the use of secret formulas which promise miraculous results. Magazines continually skirt the edge of scientific knowledge with their advice on methods of weight reduction through the use of appetite-appeasing drugs. Beauty culture establishments entice the ladies with courses of massage, calisthentics, or dancing, each accompanied by diets which range from simple starvation to simple nonsense. Not to be outdone, the appliance builders advertise belts, girdles, supports, and various mechanical "reducers" which, with the same promise of weight reduction, they sell our more corpulent brothers.

The medical profession, through its failure to educate the public in proper eating habits, is largely responsible for the present uncertainty regarding obesity diets. Doctors have been so preoccupied with the problems of trauma and disease that they have ignored the public's growing interest in the problem of excess weight. There are indications that the average physician feels the problem of excess weight is so time consuming and unrewarding that it does not merit his interest. This discussion will not go into dietary detail, but rather it will attempt to provide a method—an approach that may enable us to cope more successfully with these patients.

The simplest to prepare and most easily obtainable high-protein, high-fat, low-carbohydrate diet, and the one that will produce the most rapid loss of weight without hunger, weakness, lethargy, or constipation, is made up of meat, fat, and water. The total quantity eaten need not be noted, but the ratio of three parts of lean to one part of fat must be maintained. Usually within two or three days, the patient is found to be taking about 170 Gm. of lean meat and 57 Gm. of fat three times a day. Black coffee, clear tea, and water are unrestricted, and the salt intake is not reduced. When the patient complains of monotony, certain fruits and vegetables are added for variety. The overweight patient must be dealt with as an individual. He usually needs help in recognizing the factors at work in his particular case as well as considerable education in the matter of foods.

Chairman's address, read before the Section on General Practice at the 106th Annual Meeting of the American Medical Association, New York, June 4, 1957.

An overweight patient is defined as one whose weight is more than 10% above the average for his age and height, with allowance for hereditary and familial characteristics. Dublin and Marks' study of life insurance records indicates that the normal weight for persons aged 25 to 30 years is the ideal weight and that this weight should remain constant throughout life.[1] The vast accumulation of medical literature on obesity and related subjects is characterized by a lack of simple, easily understood, clinically applicable dietary instructions for daily use which will produce lasting results. Patients, however, when supplied with simple rules, sensible methods, tasteful diet, sympathetic understanding, regular supervision, and encouragement, will produce long-term results that are quite surprising in their effectiveness.

The opinion, generally held, that excess weight has a deleterious effect on the body and that its presence is a cause of such disease as arteriosclerosis, diabetes, hypertension, and myocarditis is not easily proved. From statistical evidence, there is little doubt that excess weight increases mortality rates in all age groups, and the earlier the age at which excess weight appears the greater the increase in mortality rates. Independent studies of Barr [2] and Dublin [3] indicate that, as a group, overweight individuals, when excess weight has been lost and normal weight is maintained, will have mortality rates not significantly different from rates of groups whose weight has always been normal. Thus, while we have indirect evidence that the popular opinion in regard to the harmfulness of excess weight is correct, we have no direct evidence. A survey of the current literature failed to produce a single study in which the conclusions were supported by carefully documented clinical or experimental evidence. The greater mass of words on this subject appears to be unsubstantiated opinions, expressed with vigor and conviction but offering little proof of scientific value.

Popular Explanations for Excess Weight

The popular explanations now being offered by lay and medical writers for the excess weight that individuals are concerned about merits some mention. For purposes of our discussion, we exclude disease types of obesity such as myxedema, Fröhlich's syndrome, diseases of the central nervous system that are found in the presence of hypothalamic lesions, and glandular syndromes of considerable rarity. This leaves the common or simple type of obesity, which is present in the largest number of our overweight patients and which will be the subject of this discussion. This common simple type of overweight is considered by most individuals and, I am sorry to add, by many physicians to be due to thyroid or glandular malfunctions—a theory long since discredited by many excellent writings in the field of metabolism. One of the more comprehensive of these writings is by Newburgh,[4] whose paper I commend to all who are inclined toward the glandular theory.

Another explanation, very popular at the present, is one advanced by the psychiatrists.[5] This theory would place the blame for excessive eating on all sorts of fetal, infantile, childhood, adolescent, and adult emotional conflicts. If one subscribes to this school of thought and is aware of the number of examples of excess weight in the audience at a medical convention, he is forced to the conclusion that the medical profession is extremely maladjusted emotionally. Then we have the reasonable concept that the American people are the best-fed people in the world and have at their command the most food, in its most acceptable forms. We have the highest level of economy in the world and the most ingrained habits of self-satisfaction of any people. This habit of satisfying our tastes by overindulgence of good food is, I believe, the most rational explanation for the great number of patients we must treat for excess weight.

The knowledge of fat and carbohydrate metabolism is rapidly being advanced as more studies utilizing radioactive isotope techniques are reported. It has been demonstrated that, while the total quantity of fat in the body is being reduced, fat has been simultaneously synthesized from carbohydrate containing tagged carbon atoms.[6] This would indicate the presence of some mechanism under whose control the storage or utilization of carbohydrate and fat is maintained. Metabolism research indicates a complex interrelationship of enzymatic and hormonal influences, stimulated or depressed by changing blood and tissue levels of carbohydrate, fat, and the end-products of their oxidization.

The clinical application of this mechanism to our problem of excess weight can be stated thus: If the carbohydrate intake is held well within the capacity of the tissues to oxidize the pyruvic acid formed from it, then all the carbohydrate ingested can be completely changed to carbon dioxide and water. Restriction of carbohydrate intake removes the stimulus to insulin production, so that the fat-storage activity of insulin will be held to a minimum. The anterior pituitary fat-mobilizing principle will then predominate over the fat-storing forces. Fat will be mobilized from the adipose deposits of the body, oxidized to ketones in the liver, and circulated to the tissues in this easily combustible form.[7] By whatever dietary method reduction of excess weight is accomplished, this normal mechanism of ketogenesis must be brought into play, for it has long been known that, while carbohydrate can be readily converted into fat in the body, fat cannot be converted into carbohydrate in any significant amounts.

According to Pennington,[7] Dr. Vilhjalmur Stefansson, anthropologist and arctic explorer, observed that Eskimos were never obese when following their accustomed diet of lean and fat meat but that obesity appeared among them with great rapidity when concentrated carbohydrate foods were introduced. During calorimetric tests at the Russell Sage Institute in 1928, a man lost excess weight while eating a diet of lean and fat meat with a calorie value of 2,000 to 3,000 calories daily. As 80% of the calories in this diet were derived from fat, it was apparent that his body was able to burn more food on this diet than on an ordinary mixed diet.[8] Kekwick and Pawan[9] recently reported significant loss of weight on a calorie intake of 2,600 per day, provided this intake was given mainly in the form of fat and protein. These observations, when considered together, would support the idea that a high-fat, high-protein, low-carbohydrate diet should be beneficial, regardless of which mechanism was considered to be the cause of the excess weight—excessive carbohydrate intake or faulty carbohydrate metabolism.

Application of Present Knowledge

To successfully apply our present knowledge of metabolism to the clinic patient with excess weight requires more than a scientific understanding of the chemical and enzyme reaction involved in his make-up. If one is to guide an overweight patient successfully through a program of weight loss and then to maintain the weight, it is necessary to utilize the patient's own emotional drives and personality needs to stimulate and direct his efforts. If a woman decides to reduce because her family and friends urge her to do so, success is not often obtained. However if she decides to reduce to increase her own attractiveness, it is not difficult to carry out a successful program and to obtain and maintain the desired result. The overweight businessman is seldom sold on the idea of losing excess weight by the desires of his wife and family. However, his cooperation is readily obtained when the problem is discussed in terms of efficiency, rates of depreciation of bodily mechanisms, and tables of longevity. The general fact that a 30% increase in weight before the middle decades increases the mortality rates as much as 75 and 80%[1b] is one the businessman readily understands, as he deals in factors of obsolescence and depreciation daily in his business.

The need to individualize the approach, to adjust the diet to the patient's taste, to develop the confidence and desire of the patient by simple and easily understood explanations, and to constantly guide the first few steps of the program are obvious factors for success. Still, the average physician does not bother to carry them out. The most brilliant and studious physician is of no use to his patients unless he can gain their cooperation and guide them through the steps that are necessary for continued good health. It has been found that the cooperation obtained and the results achieved are directly related to the interest and effort expended by the physician. The sure way to be unsuccessful is to have your nurse weigh the patient, then do a rapid physical examination, dash off a prescription for the newest combination of drugs, hand out a printed diet sheet, and say, "Come back in a month and let's see how much weight you have lost."

In general, physicians treat patients with excess weight by prescribing drugs or diet or a combination of these. For patients with simple excess weight, there is no drug available which, when used without additional therapy, will cause a loss of weight. I can find no series of cases reported in which the double-blind technique of medication was employed where results demonstrate effective loss of weight from the use of drugs alone. Thyroid has no effect on weight loss. Amphetamine-type drugs by themselves do not cause loss of weight, and their use in mixtures containing thyroid, bulk-producing substances, and cathartics should be condemned. The appetite-appeasing effect of the amphetamines may be of limited benefit in selected cases when combined with the education in and use of proper eating habits. Especially beneficial are the long-acting forms now available which are combined with sufficient amounts of sedative to avoid side-reactions so common in patients using the amphetamines. I find that Dexamyl Spansules (sustained-release capsules containing dextro amphetamine sulfate and amobarbital) are helpful in establishing the success of a program in the first few weeks, while education and diet adjustment are being established. Rarely do I use the rapid-acting forms of appetite-appeasing drugs.

Natural Diets

Proper eating is the natural and complete answer to the problem of excess weight. The words diet and dieting should be avoided. To the patient with excess weight, these words have acquired a meaning associated with a miserable, frustrating experience, ending in failure to reach even the most modest goal of weight reduction. This is especially true with patients who have had previous experience with total reduction of food or low-calorie diets in which starvation was obtained by counting calories. Starvation can result in nothing but failure for two very sound reasons. First, starvation reduces weight,

J.A.M.A., Nov. 16, 1957

ARTIFICIALLY INDUCED ASIAN INFLUENZA IN VACCINATED AND UNVACCINATED VOLUNTEERS

Joseph A. Bell, M.D., Dr. P.H., Bethesda, Md., Thomas G. Ward, M.D., Dr. P.H., Notre Dame, Ind.
Albert Z. Kapikian, M.D., Alexis Shelokov, M.D., Thomas E. Reichelderfer, M.D., M.P.H.
and
Robert J. Huebner, M.D., Bethesda, Md.

Fever, chills, and other symptoms characteristic of influenza appeared in 18 out of 23 (78%) unvaccinated volunteers about 38 hours after the nasopharynx was sprayed with nasopharyngeal secretions containing living virus from three influenza patients. The virus was influenza A/Valley Forge/57, which was antigenically similar to the Far East strain. When the same material was administered to 32 volunteers who had been vaccinated against influenza A/Japan/305/57, the cases of febrile illness numbered 14 (44%). The vaccination and the challenge inoculation both induced a hemagglutination inhibition antibody response. Influenza virus was recovered from 14 (41%) of ill volunteers. The vaccination therefore gave significant though incomplete protection against Asian influenza.

Many epidemiologic studies of inactivated influenza virus vaccines have demonstrated substantial protection against the epidemic disease,[1] whereas other studies have shown little or no such protection.[2] It has been generally concluded that the vaccines were effective when they contained adequate amounts of a virus strain antigenically similar to the epidemic strain and when administered from one to six months prior to the epidemic. One of the chief problems has been to incorporate next year's epidemic virus strain in a vaccine available for use prior to the epidemic. The difficulty arises from the frequent slight to marked changes in the antigenic composition of epidemic strain viruses. A marked change in type A influenza virus occurred in 1946-1947. Moderate changes occurred from 1948 to 1956,[3] and a drastic change occurred in the spring of 1957.[4] It was desirable to know at an early date whether a vaccine made from this new drastically different virus strain would be effective.

In 1942, Henle and associates [5] demonstrated that a rapid answer to vaccine effectiveness could be obtained through observing illness induced by intranasal inoculation of live virus into vaccinated and unvaccinated volunteers. This was confirmed through similar studies by Francis and associates in 1943.[6] The present report describes similar studies in volunteers using the new Far East strain vaccines. In brief, on July 24 and 26, 70 volunteers were given either a new strain vaccine or a placebo control in such a manner that neither they nor the observers knew who had received which product. The vaccine induced a substantial complement-fixing and hemagglutinating antibody response. On Aug. 12, and again on Aug. 22, 32 and 23 volunteers, respectively, were inoculated intranasally with live virus (influenza A/Valley Forge/57) which was antigenically similar to the Far East strain virus. Two to three days after challenge, a large proportion of the volunteers developed acute febrile illnesses, many of which were clinically considered classic influenza. The illnesses were confirmed as influenza by virus isolation during acute illness and by hemagglutination inhibition (HI) antibody responses. The illnesses were significantly less prevalent in the vaccinated than in the placebo group, thus demonstrating that the vaccine gave moderate protection against challenge-induced Asian influenza. However, the protection was far from complete, as many cases occurred in the vaccinated group.

Materials and Methods

Vaccines.—Two commercially prepared monovalent influenza vaccine products were used. They were labeled A and B and were reported by the manufacturers to have 200 and 506 chicken cell agglutinating (CCA) units per milliliter respectively. (The CCA values of each final product were determined by Dr. Bernice Eddy of the Division of Biologics Standards, NIH, and vaccine A and B were found to have 250 and 275 CCA units respectively. Dr. Eddy notes that it is impossible to demonstrate full CCA activity of virus in the final product after adsorption on protamine precipitate.) Both were early lots containing A/Japan/305/57 strain virus and both satisfied National Institutes of Health (NIH) requirements for identity and safety.

One was prepared and furnished by Parke, Davis & Company, who state that the virus-containing egg-passage fluid was concentrated a calculated 22 times and inactivated by ultraviolet irradiation with thimerosal 1:10,000 added as preservative. The other product was prepared by Merck, Sharp &

From the U. S. Department of Health, Education, and Welfare, Public Health Service, National Institute of Allergy and Infectious Diseases, Laboratory of Infectious Diseases (Drs. Bell, Kapikian, Shelokov, Reichelderfer, and Huebner) and the Lobund Institute, University of Notre Dame (Dr. Ward).

Dohme, who state that the virus-containing egg-passage fluid was concentrated 5.5 times by protamine precipitation and was inactivated by formalin 1:5,000 with thimerosal 1:10,000 added as preservative.

Inoculum.—The inoculum consisted of nasal pharyngeal washings collected from Boy Scouts attending the 1957 Jamboree at Valley Forge, Pa., who had acute febrile illness resembling influenza. The specimens were obtained by instilling 10 ml. of isotonic sodium chloride solution into each nostril and then collecting the mucus-containing fluid exuding from the mouth and nostrils. Approximately 10 ml. was recovered and quickly frozen in a carbon dioxide–acetone mixture at bedside. In addition, a throat swab specimen was collected in 5 ml. of Earle's balanced salt solution[6A] with 5% calf serum. Such specimens were obtained from 15 Scouts from southern California. Influenza virus antigenically similar to the Far East influenza strain was isolated from eight of these throat swab specimens. These eight specimens were pooled with their respective nasal pharyngeal washings and each was tested bacteriologically for common pathogens and virologically in monkey kidney and HeLa cell tissue culture mediums and inoculated into suckling mice. Specimens collected from three boys appeared to be completely free from pathogenic agents other than influenza, and titrations in hemagglutination adsorption monkey kidney cell culture[7] indicated 10^4-10^5 infectious particles per milliliter of washings. The washings from these three were pooled and diluted 1:3 with Eagle's base mediums[8] and divided into three nearly equal vials and refrozen. Two of these were used as the inoculum for the first and second volunteer groups. To each milliliter of the diluted pool, 250 units of penicillin and 250 units of streptomycin were added prior to use in volunteers. The inoculum was maintained at −50 C at all interim stages.

Inoculation was preceded by instillation of 3 ml. of sterile isotonic sodium chloride solution into each nostril of the volunteer while he was recumbent, enabling him to clear his nostrils of all mucus and washings. The oral pharynx was then vigorously swabbed with a cotton-tipped applicator dipped in the inoculum, approximately 0.3 ml. being used. Then the inoculum was sprayed into each nostril and the oral pharynx by a DeVilbiss atomizer while the volunteer was inhaling (two squeezes of the bulb in each nostril and one squeeze into the oral pharynx), each squeeze delivering 0.06 ml. of the inoculum or a total of approximately 0.3 ml. Approximately 0.3 ml. of inoculum was then instilled in a nostril. Thus each volunteer received less than 1 ml. of the diluted inoculum. By calculation each volunteer received perhaps less than one drop (0.07 ml.), certainly less than two drops, of nasal pharyngeal secretions which had been diluted twice and frozen and thawed three times.

Serologic Studies

Blood specimens were collected from each volunteer prior to vaccination and prior to challenge (17 to 29 days after vaccination) and again 15 to 18 days after challenge. The complement-fixation (CF) test was performed with the influenza A/Japan/305/57 egg allantoic fluid antigen by the Bengtson technique,[9] with use of overnight fixation in the cold room. The seed virus in the antigen had an egg-ferret-mouse-egg passage history. Normal uninfected egg allantoic fluid antigen controls showed no fixation with the serums used. All prevaccine and postvaccine serums were tested in one test run.

The HI tests performed at the NIH used standard techniques with influenza A/Japan/305/57 egg allantoic fluid antigen and human "O" erythrocytes. The seed virus of the antigen had not been passed through animals. The serums were treated overnight at 37 C with equal volumes of a receptor destroying enzyme (RDE). The prevaccine and postvaccine serums, and the prechallenge and postchallenge serums were tested in separate test runs with the latter being more sensitive.

All prevaccine and postvaccine serums were also tested for HI antibodies independently in Dr. Jensen's laboratory (the Communicable Disease Control Laboratory [CDC]). He used an egg-ferret-mouse-egg antigen and chicken cells. The serums were treated overnight with M/90 solution of potassium periodate.[9]

Throat swabs for virological study were collected from all volunteers routinely on the second and fourth day after challenge and at other times as indicated. The swabs were wrung out in vials containing 3 to 5 ml. of Hanks' balanced salt solution, which was immediately frozen in carbon dioxide. Specimens collected the second day after challenge were tested for influenza virus by standard chick embryo inoculation procedures and by hemagglutination adsorption techniques in monkey kidney tissue cultures.[7]

Throat swabs for bacteriological studies were collected from all volunteers at the time of challenge, two to three days later, and again as indicated particularly from prolonged illness. The swabs were streaked on blood agar and modified Levinthal agar which was considered adequate for detection of aerobic beta-hemolytic Streptococcus, iridescent Hemophilus, Pneumococcus, and beta-hemolytic Micrococcus (Staphylococcus) pyogenes var. aureus.

Study Volunteers.—The volunteers were healthy male inmates of the Patuxent Institution of the Maryland State Board of Correction at Jessup, Md. On July 24 and 26, 70 volunteers were given a single 1-ml. injection in the triceps muscle of one or the other vaccines or a placebo consisting of sterile saline solution. By a predetermined random sampling procedure, 30% received vaccine A, 30% received vaccine B, and 40% received placebo C.

The first test group of 32 volunteers was selected from the 70 by a random sampling process so as to consist of 8 volunteers each in the vaccine A and vaccine B groups and 16 in the placebo C group. These were challenged on Aug. 12 with live virus as previously described. A second test group of 23 volunteers (10 vaccine A, 6 vaccine B, and 7 placebo C) were challenged Aug. 22, with an aliquot of the same inoculum in an identical manner. It was planned that the second test group be selected in a similar manner, with 12 volunteers in each vaccine A and B group and 8 in the placebo group. However, the illness in the first group was more marked than the volunteers had expected and this influenced an unduly large number of last-minute refusals. The ages of the total 55 volunteers in the two challenge groups were from 21 to 57 years (median 25 years), while 65% were white and the remainder Negro.

Prior to challenge of each test group, a medical history and physical examination showed that each volunteer was in good health and free from acute respiratory illness. Each volunteer was isolated in an individual cell and inoculated with live influenza virus as previously described. Volunteers were kept under constant medical observation for nine days, including the routine taking of temperatures sublingually at 7 a. m. and 7 p. m. Two of us independently made daily medical records of the physical condition of each volunteer, and others of us independently made medical records of all volunteers during the periods of acute illness. Medication consisted of aspirin and phenobarbital as needed; tetracycline was given only to patients with pulmonary findings.

Results

Attributes such as age, race, and presence of tonsils were tabulated in order to check the adequacy of the sampling procedure used for separating volunteers into vaccine and placebo groups and into first and second challenge groups. These attributes were found to be distributed among the groups as near equally as could be expected by chance sampling variation, thus confirming the comparability of these groups.

None of the volunteers gave a history of allergy to eggs or to chickens. No immediate local or general reactions followed vaccination, except for an infrequent, nondisabling tenderness of the triceps muscle of no consequence.

The isolation procedures were effective insofar as no influenza occurred in custodial staff or in inmates who did not receive the challenge inoculum.

Antibody Response to Vaccine.—Prevaccine and postvaccine (prechallenge) serums were tested for both HI and CF antibodies. Figure 1 shows that the vaccine was antigenic, since 44% of the vaccinees had a fourfold or greater rise in HI titer and 70% had a fourfold or greater rise in CF titer, whereas no rises to either antigen occurred in the placebo group.

Figure 1 also shows good comparability of the HI test results in the two laboratories. This is particularly noteworthy, in view of the different materials and techniques used (see above). A correlation table of positive and negative inhibitions at each specific titer showed complete agreement between the two laboratories in 72% of 90 tests made with aliquots of the same serums. Agreement within a twofold range occurred in 92%, while disagreement of a fourfold or greater range occurred in only 8%. Since the CDC test did not include all volunteers, the NIH test results are the ones referred to hereinafter.

In the 55 prevaccine and preplacebo serums, all except 4 had a titer of ≦1:8 in the CF test while in the HI test one of these had a titer of >1:10. Within the limits of this test, only one of the 55 volunteers had prestudy evidence of past experience with the Asian influenza virus antigens.

Eighteen volunteers received vaccine A containing 200 CCA units, whereas 14 received vaccine B containing 506 CCA units. There were no appreciable differences in the CF antibody responses induced by the two vaccine products. The HI antibody responses tended to be poorer in volunteers who received only 200 CCA units, but the small difference in these numbers could well have been due to chance sampling variation. As will be shown later, the percentage of the vaccine A and B group who developed illness was nearly equal.

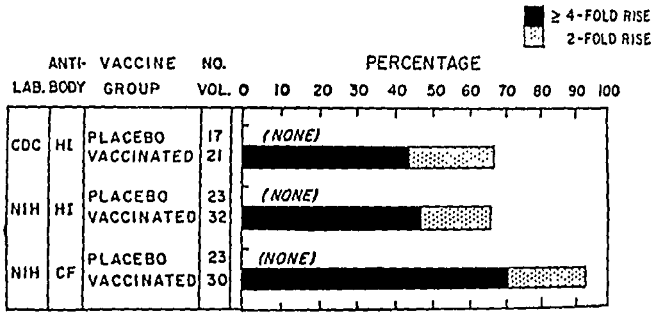

Fig. 1.—Serologic response to vaccine. Percentage of volunteers with prevaccine to postvaccine HI and CF antibody response by vaccine group.

The postvaccine serums in the first challange group were collected 17 to 19 days after vaccination, and in the second challenge group 27 to 29 days after vaccination. There was no apparent difference in either the CF or HI responses between the first and second challenge groups.

Illnesses After Challenge.—The challenge groups of Aug. 12 and 22 were inoculated with the live virus at approximately 11 a. m. Routine temperatures were taken before challenge, 8 hours later at 7 p. m., and every 12 hours thereafter for nine days. Volunteers having temperatures of 37.7 C (100 F) or higher were classified as having fever. The 55 volunteers were classified as having no febrile illness or a febrile illness either mild or moderately severe. Classification was based on the occurrence of fever and other definite clinical manifestations on which the independent findings of different medical observers were in essential agreement. During the nine days of observation after challenge, no definite clinical manifestations occurred in 23 volunteers and those were classified not ill. It should be noted that 4 of these 23 (two vaccinated and two placebo controls) had a single p. m. temperature of 37.7 to 37.9 C on the second or third day after challenge, but they were classified as not ill because they did not feel ill and had no definite clinical manifestations. Of the 32 who had a febrile illness, 13 were classified as having a mild illness, and 19 were classified as having a moderately severe illness.

Figure 2 shows the percentage of volunteers having fever during each succeeding 12-hour period after challenge. This objective observation shows a definite time relation between the challenge and the occurrence of fever, since a high proportion of volunteers had fever on the second to fourth day after challenge, whereas none had fevers during the early and late observation periods after challenge. The figure also shows that the vaccine group had a lower prevalence of fevers than the placebo group.

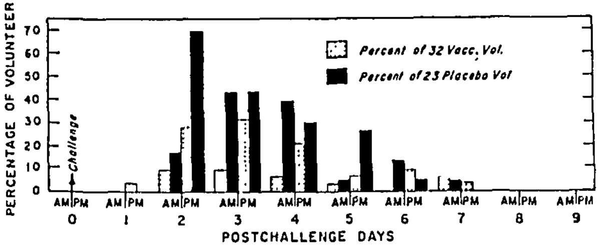

Fig. 2.—Prevalence of fever. Percentage of vaccinated and unvaccinated volunteers with fever (≧37.7 C [100 F] by day after challenge.

Table 1 shows the time relation between challenge and onset of clinical manifestations of illness. It is striking that 30 of the 32 illnesses were first recognized by the observers on the second or third day after challenge. Projection of these to the most probable time of actual onset revealed that 24 of the total 32 illnesses had onset 33 to 44 hours after challenge. This is good evidence that the illnesses were caused by the challenge inoculum. It compares favorably with the generally accepted incubation period of influenza. One notes the trend toward, and questions the significance of, the shorter incubation period for the bulk of the moderately severe cases. The mild and moderately severe illnesses which had onset on the fifth day were both in the vaccinated group. Specimens taken the second day after challenge on these two cases have not demonstrated influenza virus. The mild case had no serologic HI response to vaccine but had an eightfold rise in the prechallenge and postchallenge serums while the moderate case had a good response to vaccine but no fourfold response to challenge. The unduly long incubation period in these two cases of the vaccinated group lends some doubt as to whether they were influenza, but, for the purpose of this report, they are included as influenza illness.

Table 2 shows the percentage of volunteers with various clinical manifestations among the 13 with mild and the 19 with moderately severe illnesses and among the total volunteers in the vaccine and placebo groups. It is apparent that in the illnesses classified as moderately severe there was a greater aggregate of clinical manifestations (particularly in those that might be considered "classic" influenza), higher temperatures, and tended to have a longer duration of illness. In general clinicians without laboratory aid would probably diagnose the mild cases as influenza only during an epidemic. It may also be noted in table 3 that the general aggregate of clinical manifestations was similar in the vaccine and placebo groups, whereas ill persons in the placebo group generally had higher temperatures and illnesses of longer duration.

Table 1.—*Number of Febrile Illnesses by Day of Onset After Challenge, According to Vaccine Group and Severity of Illness*

Group	Severity of Illness	Days After Challenge 0-1	2	3	4	5	6-9	Total	
Vaccine	Mild	0	2	3	0	1	0	6	14
	Moderate-severe	0	7	0	0	1	0	8	
Placebo	Mild	0	4	3	0	0	0	7	18
	Moderate-severe	0	11	0	0	0	0	11	
Total		0	24	6	0	2	0	32	

Table 2.—*Percentage of Ill Volunteers with Specified Clinical Manifestations by Severity of Illness and by Vaccine Group*

Specified Clinical Manifestations	Severity of Febrile Illness: Mild	Moderate-Severe	Total	Febrile Illness Vaccine Group: Placebo	Vaccine
No. of ill volunteers	13	19	32	18	14
	%		%	%	
Coryza	77	100	91	89	93
Headache	77	100	91	94	86
Pharyngeal erythema	77	100	91	89	93
Sneezing	69	100	88	83	86
Cough	62	100	84	83	86
Disabling illness	39	100	75	78	71
Malaise	31	100	72	78	64
Anorexia	23	100	69	78	57
Ocular pain	15	95	63	61	64
Chills or chilliness	15	84	56	67	43
Muscle, bone, or joint aches	15	84	56	61	50
Sore throat	23	58	44	50	36
Maximum temperature					
37.7-38.2C (100-100.9F)	55	11	28	17	43
38.3-38.8C (101-101.9F)	23	58	44	33	57
≧38.9C (≧102F)	23	32	28	50	0
Duration ≦3 days	69	58	62	44	64
Illness ≧4 days	31	42	38	56	36

A typical definite case had a rather sudden onset, about 38 hours after challenge. Initial symptoms were commonly coryza, sneezing, severe headache, and fever. These and other manifestations, namely marked malaise, anorexia, scratchiness of the throat, lum both induced an HI antibody response, that the challenge inoculum induced influenza, and that the vaccine conferred protection against influenza. These similarities obtained in spite of many differences in details of methods and materials used and differences in degree of prestudy immunity of the volunteers. In the present study, 78% of the challenged unvaccinated volunteers developed influenza. This was higher than in the previous volunteer studies and lends confirmation to the epidemiologic and laboratory evidence which indicates that our present population has had little prior antigenic experience with Asian influenza viruses. This is consistent with the view that a widespread influenza epidemic is likely to occur in the United States in fall or winter of 1957.

Each of the three studies was designed to determine if the vaccine would protect against influenza. However, the results in the limited number of volunteers that could be studied did not permit an estimate of the amount of protection within narrow confidence limits. In the two previous studies the reported attack rates in the placebo and vaccinated groups were 36 versus 3% and 50 versus 23%, respectively, while in the present study they were 78 versus 44%. The calculated vaccine protection in the present study was 44%, but within a 95% confidence limit it might be as little as 15% or as great as 70%. Even this wide range does not have too much stability because the attack rates vary considerably, depending upon the end-point used for identifying influenza. For example, two vaccinated volunteers had a febrile illness of unduly long incubation period which was classified as influenza. These two cases could not be proved or disproved to be influenza by laboratory methods. If they were not classified as influenza the calculated estimate of protection would have been slightly greater.

It is unknown whether the protection was greater or less than would occur under natural conditions of exposure. It is to be recalled that each volunteer received less than two drops of the pooled nasal pharyngeal secretions, which after dilution with the washing material had 10^4-10^5 infectious particles per milliliter. These secretions were further diluted three times, frozen and thawed three times, and treated with antibiotics, all of which obviously does not occur in the natural transfer of infection from person to person.

A general evaluation of a vaccine weighs the dangers against the benefits. No untoward reactions were observed among volunteers receiving Asian influenza vaccine in the present study. Preliminary observation[14] on Asian influenza vaccine reactions in a community where 2,127 adults and children over one year of age received either the new Asian influenza vaccine (dosage from 50 to 250 CCA units according to age) or a placebo indicate that approximately 7% had systemic reactions attributable to the vaccine with most rather mild and none serious. The benefits may be measured by the prevention of illness. It is recognized that even during large epidemics not all persons are effectively exposed to infection and of those exposed, not all become ill. In this first study on the protection of Asian influenza vaccines all were exposed to influenza virus. Table 4 reflects the favorable influence of Asian influenza vaccines in various clinical manifestations in adult volunteers.

Summary and Conclusions

This report describes the inoculation of vaccinated and unvaccinated adult volunteers with live Asian influenza virus. The inoculation induced infection without illness and infection with illness ranging from mild to moderately severe "classic" influenza. The vaccines gave moderate but incomplete protection against Asian influenza, as 78% of the unvaccinated placebo group and 44% of the vaccinated group became ill with challenge-induced influenza.

W. P. Rowe, M.D., R. A. Chanock, M.D., and J. W. Hartley, Ph.D., and Mr. Enos Stockbridge of the Maryland State Board of Correction and Harold N. Boslow, M.D., Director of the Patuxent Institution, assisted in the conduct of this study.

The participation of Dr. Ward was supported in part by a grant from the Common Cold Foundation, New York.

The egg-ferrett-mouse-egg antigen used in the serologic studies was furnished by Keith Jensen, Ph.D., of the Public Health Service, Communicable Disease Control Laboratory, Montgomery, Ala.

All bacteriological studies were carried out by Roger M. Cole, M.D., Chief, Bacteriological Unit, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases.

The electrocardiograms were taken and interpreted by Arnold L. Nielsen, M.D., of the Public Health Service heart disease control program. The electroencephalograms were interpreted by Curtis Marshall, M.D., Assistant Professor of Neurosurgery, Johns Hopkins Hospital, and consultant to the Patuxent Institution.

The enzyme studies were carried out by Arthur L. Schade, Ph.D., Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases.

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PROBLEMS OF SURGICAL RESIDENCY TRAINING

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There is much that is inconsistent and irrational in the present methods of training surgeons. The old preceptorial method produced narrowly trained, tradition-bound specialists; the modern internship produces a man qualified, according to the license granted him by his state board, for the practice of medicine and surgery in general, but hardly prepared to give the best type of surgical care. A sufficiently thorough training is imperative for men who plan to go into general surgery, and a thorough training in general surgery is imperative for men who plan to go into surgical specialties. Neither need can be satisfied by civilian hospitals in the face of the constantly decreasing number of surgical ward beds. It can be satisfied by military and Veterans Administration hospitals, which are frequently filled with patients who do not have service-connected disabilities. The relation of civilian to military and Veterans Administration hospitals should be strengthened, and their resources from the standpoint of surgical training should be pooled. This will make it possible, without any lowering of standards, to train more young men in general surgery while also providing the experience in general surgery that is essential for the training of the surgical specialist.

It was William Halsted who demonstrated by precept and example that the training of the surgeon encompasses more than the technical aspects of the operation. It was he who first emphasized that the total care of the surgical patient does not end with the operation itself. At the time Halsted was teaching his residents that wounds heal more promptly if tissues are handled gently, and that shock often does not make its appearance, even after prolonged operations, if blood loss is carefully controlled and tissue injury minimal, the great majority of American graduates in medicine who wished to become surgeons were being trained under the preceptorial system.

No one could deny that any training under competent preceptors that added to the trainee's experience was better than no training. However, under the preceptorial type of training the trainee had little time to think for himself. He had little or no opportunity to test his own beliefs by the use of various methods. He was essentially an assistant from the time he apprenticed himself for preceptorial training until he severed this relationship. From early morning until late at night his training was designed to provide, in him, a replica of the man who was training him. In contradistinction to this type of training, the residency system provided, for the first time in the United States, the opportunity for the resident to be looked upon with respect and with dignity.

From the Hospital of the University of Pennsylvania.

Read before the Section on Military Medicine at the 106th Annual Meeting of the American Medical Association, New York, June 6, 1957.

These institutions can, because of the very nature of their organization, set a pattern which will be difficult to achieve in many civilian institutions in the not-too-distant future unless adequate solutions can be found for the constantly decreasing number of surgical ward beds. Those responsible for the conduct of these programs in military, Veterans Administration, and PHS hospitals may before long be faced with an opportunity unparalleled in the history of surgery in this country. They may find it necessary, if they are to fulfill their responsibilities, to train many young men in surgery and in the surgical specialties, not only for their institutions but, in increasing numbers, for a career in civilian life.

The idea is not so far fetched as it would seem to be at the outset. Will these individuals not be brought back to assist in fulfilling the mission of the medical departments of the Army, Navy, and Air Force in times of real need? Many of those members of the armed forces and other governmental services now engaged in a career in surgery or one of the specialties have had their training in civilian institutions. Is it not just as reasonable to look to the military hospitals, with their abundance of material, for assistance in preparing those who wish to remain primarily civilian surgeons and civilian surgical specialists? And yet, while those in training in military hospitals are operating every day on the dependents of military personnel, those in residency training in civilian institutions are not permitted to operate on these same dependents under the Medicare program. Under this program, as administered by the Blue Shield plans in a number of states, the applicant who is applying for the fee for service must certify that he is not a resident.

Is not a resident who has already had several years of special training more competent to provide surgical care than is the intern who has just passed his state board medical licensure examination and thereby received a license supposedly qualifying him for the practice of medicine and surgery? The Blue Shield plans pay such individuals when they have a hospital in which they may operate. And yet these very organizations refuse to pay residents who have had two, three, four, or ofttimes more years of training, because they are still classed as residents. Can the persons who are responsible for the administration of the Blue Shield plans maintain this type of thinking while at the same time they lament the fact that our Veterans Administration hospitals are frequently filled with patients who do not have service-connected disabilities?

Comment

In the military hospitals and in the PHS and Veterans Administration hospitals there is a wealth of material which is available for the training of surgeons and surgical specialists. It is the responsibility of those who administer these institutions to develop men, by accepting the concept of providing increasing opportunity and responsibility, so that the men whom they are training become qualified to practice in that particular area of surgery in which they are interested. It is likewise their responsibility to see that those who are being trained in the surgical specialties have adequate training in general surgery, regardless of whether a specific board requires this or not. It will increase the degree of critical facility of the trainee. It will encourage him to be a continuing student. It will add greatly to what he may later offer to his patients. It must be accepted that the operation is but a part of surgical therapeusis and not the whole of it. If this hypothesis is true, there should in reality be no difference in the training between those who spend their lives in a career in military surgery or a surgical specialty and those who spend their lives in comparable facets of surgery in civil life. Since World War II there has been a continuing strengthening of the relations between our civilian institutions and our military hospitals and the hospitals of the Veterans Administration. This is as it should be. We must continue to strengthen this relationship, and we must pool our resources from the standpoint of surgical training.

We must vigorously and intelligently explore the ways and means whereby an increasing number of young men can obtain adequate basic training in general surgery, to serve as the foundation for advanced training in general surgery, or for a surgical specialty. We must freely admit that this training need not be given in university hospitals, but that more frequently than is now being done it can be given in adequately staffed civilian, military, PHS, and veterans' hospitals. We must explore more actively than has been done the possibilities available to develop satellites for the extension of surgical training.

Many of our great hospitals in teaching centers do not admit large numbers of patients who are the victims of severe trauma. We must provide training in the care of such patients. The very future of our nation may well depend upon the degree of competence gained in the treatment of trauma by young men in training. We must provide such training where it is available, and where men are competent to supervise it. Institutions in which it is not now possible to offer complete training may well be able to supplement the basic training received at the parent institution.

The Conference Committee on Graduate Training in Surgery must take a new look at this matter. Without lowering the acceptable general standards of training it must provide a program which will make it possible to train a larger number of young men in general surgery and provide the basic general surgical training that is now recognized to be important in the training of the surgical specialist.

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INTRAMUSCULAR ADMINISTRATION OF THE ANTICOAGULANT WARFARIN (COUMADIN) SODIUM

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and
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Warfarin is the first synthetic anticoagulant which is clinically available for administration by other than the oral route. Administered intramuscularly in a single dose of 75 mg., the peak effect of hypoprothrombinemia was observed on the second and third day and the total therapeutic effect lasted as long as five days. Injections were made in the upper outer quadrant of the buttocks or, in a few cases, in the deltoid region. The drug was well tolerated by the patients, and serial blood pressure readings showed no significant change. Warfarin was administered intramuscularly to patients in their homes. This presented no unusual problem requiring hospital facilities.

Warfarin (Coumadin) sodium is a new anticoagulant, developed in the laboratory of Prof. Karl P. Link of the University of Wisconsin, from whence the first orally active anticoagulant, bishydroxycoumarin (Dicumarol) issued. Warfarin is a unique prothrombin-depressing agent, since the drug is effective when given orally,[1] intravenously,[2] and rectally.[3] The prothrombin-depressing capacity after intramuscular administration is the subject of this report. Warfarin thus represents the first synthetic anticoagulant which is clinically available for administration by other than the oral route.

Whether warfarin was administered intravenously, orally, or rectally, the therapeutic range was reached at about 24 hours and as a rule lasted for about three to five days, with a plateau of therapeutic hypoprothrombinemia at about 48 to 72 hours after administration. Differences in individual responses occurred, as expected. But, as a rule, an initial dose of 1 mg. per kilogram of body weight, usually 75 mg., by any route, induced the abovementioned hypoprothrombinemia, and daily maintenance doses of 5 to 10 mg. were adequate for most patients.[1]

The effectiveness by the intravenous route suggested the usefulness of parenteral administration, particularly in acutely and severely sick patients suffering from myocardial infarction and/or pulmonary embolism, who could not swallow medicaments because of heavy sedation, shock, nausea and vomiting, or presence of an inserted suction tube or in those patients who showed resistance to bishydroxycoumarin or other synthetic anticoagulants.[4]

Eble,[5] working in Link's laboratory, demonstrated that when warfarin was given intravenously to rats, it diffused rapidly to the tissues and certain organs and was found in maximum concentration in the plasma, liver, and muscle five minutes after injection. The high amounts found in the muscle prompted one of us (S. S.) to administer 75 mg. in 10 cc. in different areas of the gluteal region to suitable candidates for anticoagulant therapy. The response, as determined by the Link-Shapiro modification of the Quick method for estimation of plasma prothrombin time, suggested that the drug was equally absorbed from the muscle as from the vein.[6] In this respect, the compound's behavior in humans is similar to that anticipated from Eble's findings in rats.

An examination of the reports on this drug indicates that the incidence of bleeding is low, bleeding occurring mainly in those patients who have recently undergone major surgery. In our own experience with the new drug, given orally, intravenously, or intramuscularly, bleeding has been less than with the earlier available anticoagulants. In any event, very low levels of prothrombin activity, with or without bleeding, were readily counteracted with phytonadione (vitamin K_1, Mephyton) in small doses, administered orally or intravenously. Low levels of prothrombin activity are not necessarily an indication for the use of phytonadione, but they do indicate the need for caution in administering further doses of the anticoagulant until the plasma prothrombin activity reverts to the safe but adequate range of hypoprothrombinemia.

This account reports on our experience with warfarin administered intramuscularly to 35 adult patients with thrombotic or thromboembolic conditions (thrombophlebitis, pulmonary embolism, and coronary artery disease with myocardial infarction), who were on the wards of the Lincoln Hospital or private patients.

Material and Methods

Warfarin, 75 mg., was supplied in two forms for intramuscular administration. The first preparation consisted of 75 mg. in 2 cc. of a 3.5% solution of povidone (polyvinylpyrrolidone); the second, and

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From the Lincoln Hospital (Drs. Shapiro and Ciferri) and New York University College of Medicine (Dr. Shapiro).

the presently preferred form, is a single injection unit consisting of one vial containing 75 mg. of warfarin in powder form with an accompanying 3-cc. ampul of water for injection; the solution can be prepared immediately prior to intramuscular (or intravenous) administration. The responses with both forms were similar; hence the results are treated together with respect to intramuscular injection.

Injections were made in the upper outer quadrant of the buttocks or, in few cases, in the deltoid region. The drug was well tolerated by the patients, and serial blood pressure readings showed no significant change. None of the patients received heparin. The usual initial dose was 75 mg., regardless of body weight. Except in a few cases, anticoagulation, subsequent to the initial dose, was by oral administration.

Table 1.—*Response of Prothrombin Time of Twenty-four Patients Who Had Not Received Previous Anticoagulant Therapy to Intramuscular Administration of Seventy-five Milligrams of Warfarin (Coumadin) Sodium*

	Prothrombin Time, in Sec., on Day				
Control Day	1*	2	3	4	5
12.0	21.0	34.0	31.0	27.0	21.0
13.0	19.0	35.0	30.0	19.0	...
15.0	20.0	21.0	23.0	20.0	...
15.0	...	26.0	26.0	23.0	18.0
15.0	27.0	27.0	26.0	21.0	21.0
15.0	19.0	32.0	31.0	27.0	24.0
15.0	21.0	31.0	32.0	27.0	18.0
14.0	22.0	31.0	29.5	27.0	21.5
15.5	26.0	30.5	30.0	25.0	...
13.5	22.0	27.5	29.0	25.0	...
13.0	21.0	30.0	29.0	24.5	...
14.0	25.5	32.5	30.0	27.0	23.5
15.0	21.0	29.0	24.0	...	...
14.0	22.5	29.0	27.5	23.0	...
14.5	25.5	34.0	35.5	30.5	27.0
14.0	20.0	30.5	27.0	23.5	...
13.5	20.0	27.5	23.0	...	...
14.0	23.5	32.5	36.0	29.0	24.5
13.5	19.5	29.0	22.0	...	...
14.0	19.0	27.5	30.5	25.0	...
13.5	22.5	30.0	32.5	27.5	22.0
13.8	23.7	32.5	27.5	...	...
15.0	23.9	29.5	33.5	29.0	24.5
16.0	27.5	33.0	44.5	34.0	29.0

* Day 1 represents time up to 24 hr. In many cases first prothrombin estimation was made before 24 hr. had elapsed.

Estimations of prothrombin time by the Link-Shapiro modification of the Quick method, with Simplastin used as the source of thromboplastin, were made at intervals of 24 hours. No attempt was made to determine the lag period before initiation of hypoprothrombinemia, as in an earlier report on warfarin.[2a] Phytonadione, 20 mg., was administered in one patient who manifested a high prothrombin time, without signs of hemorrhage. A prompt counteraction occurred and oral maintenance therapy was instituted.

Results and Comment

Tables 1 and 2 list the prothrombin response to a single dose of 75 mg. of warfarin administered intramuscularly to 35 patients; 24 had not received anticoagulant therapy previously (table 1); 11 were recovering from a previous dose of anticoagulant (table 2).

The results in the first 24 patients were grouped by days and treated statistically as a unit (table 3) (fig. 1). Analysis of variance for all observations after treatment shows that the groups vary more than expected ($p < 0.01$) relative to the variation within groups. In other words, by comparison with the slight variation in prothrombin time from patient to patient on a given day, the variations for the total group from day to day seem impressively large. This indicates a significant relationship between time and response after a single dose. The standard deviation of a single determination was calculated at ± 3.2 seconds for post-treatment observations. While these data suggest that significantly elevated values might still be obtained on the seventh and eighth post-treatment days, we did not analyze the results of prothrombin determinations since we were interested in demonstrating the early rather than the late effect of the induction dose and also because oral maintenance therapy was usually started on the fifth day. The conclusion about the significant effect of the drug is valid. In this respect it can be concluded that intramuscular administration of the drug provides essentially the same effect as intravenous administration. This may well be the route of choice when parenteral administration of warfarin is desirable. Since many reports have suggested that the greatest benefit from anticoagulant drugs is derived from administering them at the

Table 2.—*Response of Prothrombin Time of Eleven Patients Who Had Received Doses of Warfarin (Coumadin) Sodium Previous to Intramusmuscular Administration of Seventy-five Milligrams of Warfarin*

Prothrombin Time, Sec., at Time of Administration	Prothrombin Time, in Sec., on Day				
	1*	2	3	4	5
19	24	25.0	35.0	27	22.0
19	22	37.0	38.0	39	31.0
16	24	34.0	27.0	20	...
19	30	34.0	29.0	18	...
19	29	40.0	35.0	25	20.0
17	22	33.0	25.0	17	...
17	25	35.0	40.0	23	21.0
19	24	33.0	35.0	30	20.0
18	30	31.0	40.0	25	24.0
19	26	31.5	35.0	29	25.5
15	27	40.0	32.5	28	24.5

* Day 1 represents time up to 24 hr. In many cases the first prothrombin estimation was made before 24 hr. had elapsed.

Table 3.—*Analysis of Data on Prothrombin Time Response in Twenty-four Patients to Initial Intramuscular Doses of Seventy-five Milligrams of Warfarin (Coumadin) Sodium*

Day	No.*	Av. Prothrombin Time, Sec.	±S.E.†
Control	24	14.2	0.2
1	23	22.4	0.5
2	24	30.2	0.6
3	33	28.9	0.8
4	20	25.8	0.8
5	12	23.2	0.9

* No. of patients whose prothrombin time was estimated on given days.

† Standard error of means $= \sqrt{\frac{\Sigma d^2}{N(N-1)}}$

earliest possible moment after a clinical diagnosis has been made, we now prefer to give the drug intramuscularly to attain this goal. There is no discomfort or undue disturbance to the critically ill patient suffering from myocardial infarction or pulmonary embolism. These results show that a single intramuscular administration of 75 mg. of warfarin induces a peak within the therapeutic range at the second post-treatment prothrombin time determination. By administering the drug in this manner, the clinician can have confidence that recipients have the benefit of the drug without having to consider gastrointestinal factors which might retard absorption of the drug.

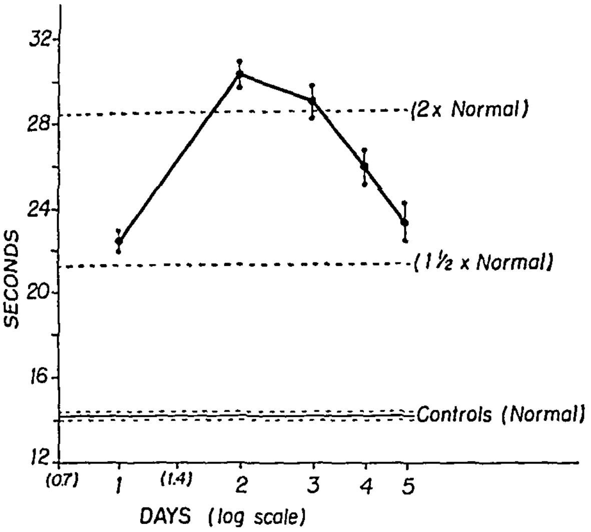

Fig. 1.—Curve derived from data in table 3. Note therapeutic hypoprothrombinemia induced at first prothrombin time determination following administration of drug. Peak effect occurs at second determination, and therapeutic hypoprothrombinemia persists to fifth prothrombin time determination. As a rule, oral maintenance therapy is instituted at day 5.

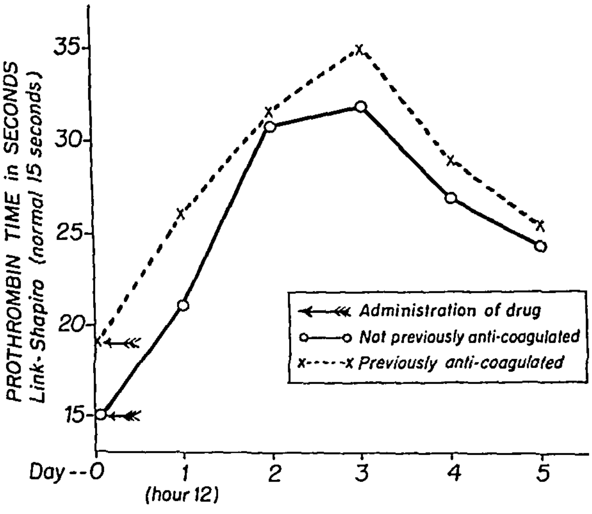

Fig. 2.—Typical response of two patients after single intramuscular dose of 75 mg. of warfarin (Coumadin). Note correlation of individual courses with course for all patients shown in figure 1.

Heparin was not used in any patients in this series. Where heparin is deemed desirable, it can be mixed in the same syringe as the warfarin and given intravenously. The solution may be given separately or mixed with a pressor drug for intravenous administration.

As stated above, prothrombin time determinations were not analyzed beyond day five after the injection, since oral maintenance therapy was initiated as the prothrombin time reached the level of about 1½ times the control value. Warfarin was administered intramuscularly to patients at their homes. This presented no unusual problem requiring hospital facilities. We had previously determined that a delay of about 24 hours after drawing a sample of blood did not have any significant effect on the prothrombin time as determined for that sample.[6] These unpublished results have found confirmation in a recent English report by Watson,[7] who reported no difference in prothrombin time of a blood sample 30 minutes or 24 hours after withdrawal from a vein. Hence, when we administer warfarin at home, the blood sample is transported to the laboratory for prothrombin time determination.

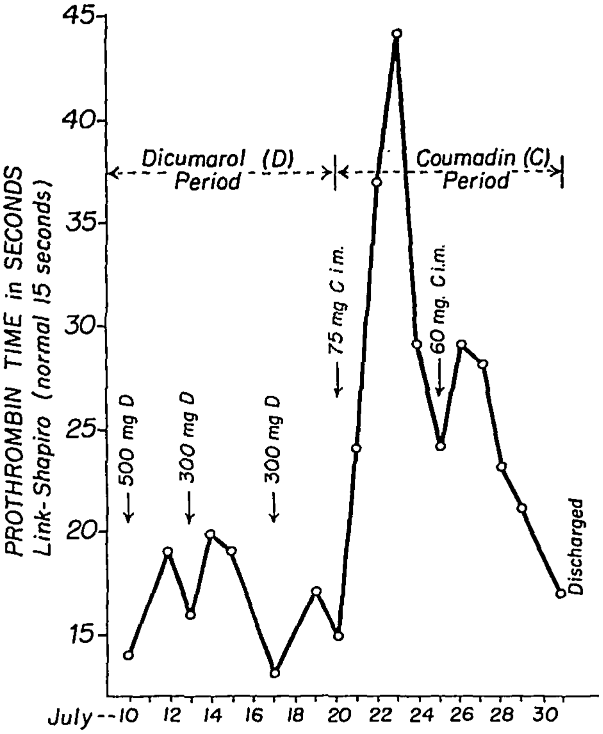

Fig. 3.—Course of patient with pulmonary infarction who was first given bishydroxycoumarin (Dicumarol), with no ensuing prothrombin depression, and then was given warfarin (Coumadin) intramuscularly, with resulting prothrombin depression.

Administration Hospital. They ranged in age from 32 to 80 years. They received the anticoagulant treatment for acute myocardial infarction (78), pulmonary infarction (2), congestive heart failure (2), phlebitis (1), cerebral embolus (1), and peripheral embolus (1). The patients with myocardial infarction selected for anticoagulant therapy were "bad-risk" cases in accordance with the criteria suggested by Russek.[7] Warfarin was initially available in 25-mg. scored tablets which were halved or quartered to make doses of 12.5 and 6.25 mg. Subsequently 10-mg. and 5-mg. scored tablets were provided, which simplified administration of smaller maintenance doses. An initial dose for patients weighing up to 75 kg. (165 lb.) was 1 mg. per kilogram of body weight. Heavier patients, usually those above 90 kg. (200 lb.), were given 100 to 150 mg. of warfarin during the first 24 hours.

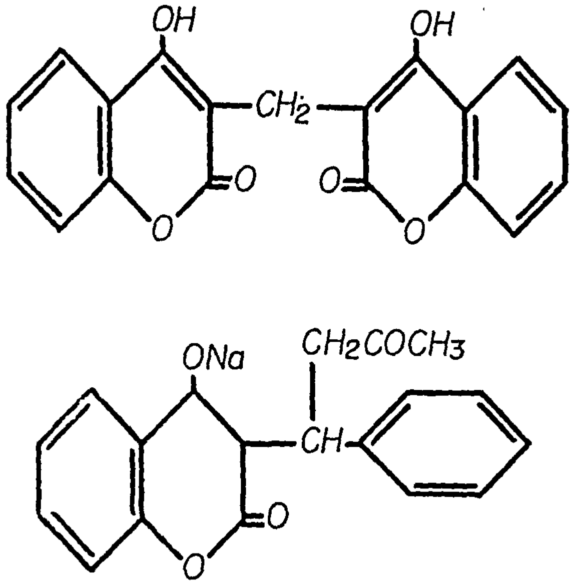

Fig. 1.—Structural formulas for, *top*, bishydroxycoumarin (Dicumarol) and, *bottom*, warfarin (Coumadin) sodium.

In the presence of suspected hypoprothrombinemia, probable sensitivity to anticoagulants, or bleeding diathesis, the initial dose was often lowered to about 0.75 mg. per kilogram. It was decreased considerably also if congestive heart failure was marked if hepatic or renal disease was present or suspected. Wherever possible, prothrombin determinations were obtained before the first initial dose of the drug was administered. However, many patients were seen after the usual laboratory hours when initial prothrombin time could not be obtained. Hence, to minimize excessive prothrombin depression the estimated first 24-hour dose was administered in our early trials in two portions with a 3:1 or 2:1 ratio and an 18-hour to 24-hour interval between the two doses. As we gained experience, the initial dose was given at one time.

Warfarin was administered to the patient between 6 and 8 p. m. after availability of the report of the prothrombin time. Prothrombin determinations were done daily on blood drawn at 9 a. m. and carried out on whole plasma by the one-stage method of Quick,[8] with use of thromboplastin (Simplastin). The thromboplastin preparation used during the period of this study proved to be stable. Control prothrombin times were uniformly 13 seconds. Prothrombin results were reported by the laboratory both in seconds and per cent. For this report, the prothrombin time in seconds has been used.

Attempts were made to achieve and maintain an extension of prothrombin times to 2 to 2½ times the control, or 26 to 40 seconds. We designate these times as the "optimal prothrombin time." Prothrombin times of 1½ to 2 times the control, or 20 to 25 seconds, were considered "suboptimal."

A special consideration of this category was prompted by our experience and that of others[9] that such "suboptimal" prothrombin depression may afford significant protection against thromboembolic episodes in certain conditions, such as congestive heart failure. Values of 41 seconds and above were considered excessive. Patients whose prothrombin time reached an optimal level after the initial dose of warfarin were usually given the recommended maintenance dose of 5 to 10 mg., depending upon the prothrombin time response noted and the patient's condition.

Observations

Initial Therapy.—Table 1 reviews the initial response to warfarin in 78 patients of a total of 85. The results in 7 patients were discarded due to initial use of bishydroxycoumarin. At the end of 48 hours, or 36 to 48 hours after administration of warfarin, 46% of the patients had attained suboptimal prothrombin levels. Most of these patients fall in the group receiving the lower dosage. Optimal levels were obtained in 35 patients, or 45%, by 36 to 48 hours. Thus a total of 71 patients, or 91%, exhibited a prothrombin time prolongation of not less than 1½ times the control value within 48

TABLE 1.—*Initial Response to Warfarin (Coumadin) Sodium in Seventy-eight Patients*

Total Initial Dose, Mg.*	Patients, Total No.	Patients with SOPT† in 48 Hr		Patients with OPT† in					
				12-24 Hr.		36-48 Hr.		60-72 Hr.‡	
		No.	%	No.	%	No.	%	No.	%
20-39	2	1	50	1	50	...	...	...	...
40-49	2	...	...	...	...	2	100	...	...
50-59	19	10	53	2	10.5	7	37	7	37
60-69	7	4	52	...	...	2§	28	2	28
70-79	28	14	50	1	3.5	12§	43	10	36
80-95	8	3	37	1	12.5	4	50	2	25
100-105	12	4	33	...	...	8	67	1	8.3
Total	78	36	46.2	5	6.4	35	45	22	28.2

* Over 24-hour period; for explanation of divided administration see text.

† SOPT = supoptimal prothrombin time; OPT = optimal prothrombin time.

‡ Some of these patients showed SOPT's during preceding period.

§ Two additional patients showed excessive prothrombin times of over 41 seconds (see text).

hours. This is a degree of prothrombin depression considered by many to be therapeutically adequate. In two additional patients excessive levels were reached in 48 hours on a dosage of 60 and 75 mg. respectively. One rapidly returned to an optimal level with intraveous administration of 15 mg. of phytonadione. The second patient did so without phytonadione administration. Twenty-two patients, or 28%, reached optimal levels by 60 to 72 hours, having shown only suboptimal or below suboptimal levels in the preceding periods. Thus by the end of the third day a total of 57 patients, or 73%, had reached optimal levels of prothrombin time on warfarin therapy.

As regards the effect of the size of the initial dosage upon the frequency and promptness with which initial therapeutic levels are reached, the various dosage groups are too disparate in size to permit conclusions of decisive statistical significance. However, there is a definite trend for larger initial dosages to be associated with earlier therapeutic levels of the prothrombin time. This is particularly well demonstrated for the responses to the higher dosages during the 36 to 48 hour period (table 1).

Our experience with warfarin is in essential agreement with that recorded by others.[10] A comparison of the initial efficacy of warfarin with that of other anticoagulants reveals that, while warfarin does not produce its effect as rapidly as heparin, it is able to initiate desirable therapeutic levels more rapidly and with greater regularity than diphenadione[11] and phenindione.[12] Safe but adequate therapeutic levels may be achieved with warfarin in 48 to 72 hours in over 73% of the patients.

A comparison with bishydroxycoumarin would be very desirable, since this drug is still so widely used, but a detailed comparison is made difficult by the great differences in the manner of administration. It is nevertheless quite evident from the data in Wright's comprehensive series[9] that only a small percentage of patients receiving the established dosage of 300, 200, and 100 mg. of bishydroxycoumarin on three successive days showed prompt and optimal prothrombin depression. Only 12% showed it by the second and only 41% by the third day. The importance of inducing an early optimal therapeutic range is suggested strongly by the recent report of Lee and O'Neal.[13] These workers conclude from a study of autopsy data that anticoagulant therapy to be effective must be initiated at not more than three days from the first sign of a myocardial infarction.

Our later experience with the drug led to the conclusion that if the recommended dose of 1 mg. of warfarin per kilogram had been used consistently in our series, we would in all likelihood have obtained optimal levels of prothrombin time in 48 hours in a higher percentage of our patients. This dosage is usually safe provided that an initial prothrombin time determination is done and impaired renal or hepatic function is ruled out. In those cases in which the initial prothrombin time was not available, we found it desirable to give the total daily dose in two portions, even though the maximum hypoprothrombinemic effect might be delayed. The earlier reports of a more rapid appearance of therapeutic hypoprothrombinemia were based on a single optimum dose of 1 mg. per kilogram. The precaution taken by us was designed to obviate an excessive response, such as may occur in the presence of congestive failure. Our experience, nevertheless, suggests that an excessive hypoprothrombinemia is usually not associated with any gross bleeding. This point will be discussed below.

Heparin was used during the first 24-hour period when the need for therapeutic anticoagulation within a few hours appeared urgent. However, the rapid attainment of therapeutic suboptimal and optimal prothrombin levels with warfarin in a high percentage of cases (97% in 36 to 48 hours) made it possible to discontinue the heparin administration by the second day.

Maintenance Therapy.—We felt it desirable to obtain more information on prolonged maintenance therapy with a continuous dosage schedule than was available from the previous reports. Where feasible, patients were kept on maintenance therapy for longer than the usual period of four weeks after the acute thromboembolic episode. Observations dealing with the use of warfarin for protracted anticoagulation after discharge from the hospital are still in progress.

Tables 2 and 3 list observations on 79 hospitalized patients maintained with warfarin for a total of 2,158 days. Five patients (6.3%) were on maintenance therapy for 11 to 14 days, 18 (22.8%) for 15 to 21 days, 23 (29.5%) for 22 to 28 days, and 33 (41.8%) for over 28 days. Five patients were eliminated from this series because of treatment for less than 10 days. One additional patient was eliminated when the warfarin administration was interrupted for three days because of unavailability of the drug: phenindione was used instead. It may be mentioned here that such interchange with phenindione or bishydroxycoumarin was accomplished readily without ensuing "escapes" from therapeutic levels.

The number of maintenance days ranged from 11 to 55. The great majority of patients (70%) were observed for periods of three to six weeks. Only about 6% of patients were followed for from 11 to 14 days. Optimal prothrombin depression occurred on 54% of the total maintenance days, while suboptimal levels occurred on 37% (table 2). Only

2.4% exhibited prothrombin times exceeding 40 seconds, and of these very few were over 50 seconds. Thus, a total of 94% of all maintenance days were characterized by a prothrombin depression of 20 seconds or more. Expressed in a different manner, total "escape" occurred only in 6% of all maintenance days. This figure is in close concordance with that reported by Nicholson for a shorter period of therapy.[14]

TABLE 2.—*Maintenance Days and Hemorrhagic Manifestations at Various Prothrombin Time Levels*

Prothrombin Times	Maintenance Days No.	Maintenance Days %	Hemorrhagic Manifestations
Below 20 sec.	136	6.3	None
Suboptimal (20-25 sec.)	807	37.4	None
Optimal (26-40 sec.)	1,164	54.0	1 (bleeding gums)
Excessive (41-60 sec.)	51	2.4	1 (epistaxis) 1 (microscopic hematuria)
Total	2,158		

Table 3 lists the maintenance dose requirements of 79 patients over a period of 2,158 patient-days. The variety of doses recorded reflects the change in tablet size available at different times. For the purpose of simplification, doses varying little from each other were combined. On over 50% of the maintenance days the patients required 5 to 15 mg. of warfarin for the daily maintenance of optimal prothrombin depression. There is a fairly even distribution of dosage within this range of doses, with the 9 to 10 mg. group having the most maintenance days. This is in agreement with other reports in the literature.[15] On 17% of the maintenance days there was need for doses larger than 15 mg. to meet our criteria for optimal maintenance. On 10% of the maintenance days the therapy was temporarily discontinued. This occurred when the prothrombin time was at the higher levels or outside of the therapeutic range.

TABLE 3.—*Warfarin Dosage and Maintenance Days Related to Therapeutic Levels of Prothrombin Times*

	Maintenance Days		Maintenance Days at Therapeutic Levels			
			SOPT*		OPT*	
Dose, Mg.	No.	% of Total	No.	%	No.	%
2.5-3	38	1.8	7	0.3	31	1.4
5	273	12.6	43	2.0	221	10.2
6-7.5	303	14.0	73	3.4	217	10.0
9-10	429	19.8	163	7.5	248	11.4
12.5	264	12.4	105	4.8	131	6.1
15	237	11.0	132	6.1	89	4.1
17-18	116	5.4	59	2.7	31	1.4
20	118	5.5	72	3.3	28	1.3
25	124	5.7	68	3.1	15	0.7
30	19	0.9	8	0.3	1	0.05
35	3	0.1	2	0.1	1	0.05
40	4	0.1	...	...	...	...
None	221	10.0	...	...	32	1.4
Total	2,158					

* SOPT=suboptimal prothrombin time; OPT=optimal prothrombin time.

Figure 2 illustrates the relationship between optimal and suboptimal days and the various dosages administered. Most optimal days occurred at the 5-to-12-mg. dose. The highest number of suboptimal days occurred when the daily dose was above 15 mg. Only a few patients required maintenance doses of 20 mg. or greater for any appreciable length of time. The higher doses of warfarin were necessary to correct prothrombin times that were slow in rising or to correct "escapes" to suboptimal levels.

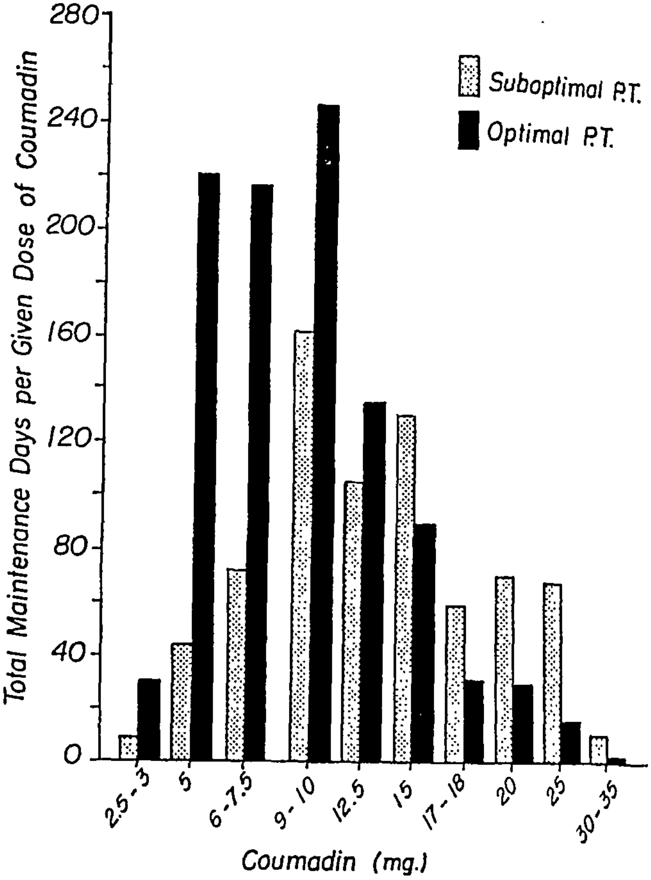

Fig. 2.—Relationship between days on which there were optimal and suboptimal prothrombin times and dosage of warfarin (Coumadin).

TABLE 4.—*Response to Warfarin in Terms of Maintenance Days per Patient*

Prothrombin Level	% of Total Maintenance Days per Patient	Patients, No.	% of Total Patients
Optimal	<25	4	5.1
	25-50	28	35.4
	50-75	41	51.8
	>75	6	7.6
Total		79	
Suboptimal	<25	18	22.8
	25-50	52	65.7
	50-75	8	10.1
	>75	1	1.3
Total		79	

Table 4 demonstrates the response to warfarin in terms of maintenance days per patient. It can be seen that about 60% of the patients showed an optimal prothrombin time prolongation during more than half of their entire period of maintenance with warfarin. In evaluating this one must keep in mind that this maintenance period includes the early adjustment period of nearly two weeks in which frequent fluctuations of prothrombin response are to be expected in most patients. If the suboptimal prothrombin depression is also taken into consideration it appears that about 71% of all patients experienced therapeutic anticoagulation during more than half of the entire maintenance period.

Comment

A comparison of our data on the maintenance effect of warfarin with those reported for bishydroxycoumarin appears very favorable. This is particularly apparent when the lack of marked fluctuations of prothrombin times noted in our series is considered. The ability to maintain a patient on a given dosage and to avoid frequent "escapes" depends basically upon the inherent characteristics of the anticoagulant used. The ability of warfarin to provide long periods of stable levels of hypoprothrombinemia for any single patient makes it superior to bishydroxycoumarin, ethyl biscoumacetate, and the indandione preparations available, as judged by previous personal experience and that recorded by others.[16] Marked fluctuations of prothrombin levels occur, often secondary to overcautious reduction of the dose when prothrombin times are noted to pass the 30-second mark. This hasty reduction should not be necessary with a drug such as warfarin in view of the excellent tolerance to even excessive doses.

Another cause for undesirable fluctuation of the prothrombin time arising from alterations of the dosage may be related to the time relationship of prothrombin time determination and dosage administration. Prothrombin determinations are usually done at 24-hour intervals during the acute thrombotic episode. These frequent determinations are done to ascertain if anticoagulation is adequate, with respect to the therapeutic range, and to guard against the probable occurrence of hemorrhage from a dose to be subsequently administered. The nature of compounds such as bishydroxycoumarin and biscoumacetate, for example, necessitates rigid control, as assessed by prothrombin time. The anticoagulant effect of any single dose of bishydroxycoumarin is not fully manifested in the 24-hour period following its administration. In the case of biscoumacetate, extremely marked fluctuations in prothrombin time occur within any 24-hour period.

In the case of warfarin, we found that administration of the drug two to three hours after the prothrombin time is determined allowed for a maximal achievement of the effect before the next prothrombin time is done and the succeeding dose is given. The adoption of this time schedule led after a few initial trials to the successful administration of daily doses which not only proved safe but yielded consistent therapeutic effects with little overshooting and little "escape."

We did not encounter any toxic side-reactions after use of warfarin. As regards excessive actions of the drug, we were impressed with the paucity of gross and microscopic hemorrhagic phenomena. Gross bleeding occurred in only two patients. One patient had a brief epistaxis on his 20th treatment day. This was not associated with a marked hypoprothrombinemia and did not interfere with continuation of warfarin therapy. A second patient had bleeding gums for three days, with a prothrombin time of 26 seconds, and warfarin therapy was continued. Microscopic hematuria was searched for in patients with excessive prothrombin depression and was found in only one patient. The few patients exhibiting excessive prothrombin depression responded readily to phytonadione in doses of 15 to 30 mg. In contrast to those receiving bishydroxycoumarin, they did not show subsequent refractoriness or an unduly delayed response to reinduction of warfarin therapy. Some patients in whom phytonadione was temporarily withheld did not bleed, in spite of excessive prothrombin time levels.

Four deaths occurred while patients were undergoing anticoagulant therapy. These deaths could not be related to this therapy. Three patients died one, three, and four weeks, respectively, after acute myocardial infarctions with the clinical picture of recurrent acute coronary occlusion or insufficiency. One patient with repeated myocardial infarctions developed a third one while on prolonged anticoagulant treatment and died shortly after admission in severe shock. This low mortality from myocardial infarction (5%) in a bad-risk group of patients is striking, but a discussion of its significance in relation to anticoagulant therapy is not within the scope of this report.

We have not encountered a single proved instance of an acute thromboembolic episode subsequent to the initiation of therapy. This is rather striking, even in this small group of patients. It suggests the protective benefit derived from administration of the anticoagulant, even in those cases where only suboptimal prothrombin depression was obtained.

Illustrative Cases

The following examples of therapy and the figures based on them have been selected to illustrate some of the extremes in prothrombin time response and also various effects of the type of management.

Figure 3 demonstrates a slightly excessive response to the initial single dose of warfarin and an erratic response to subsequent small doses of this drug. It is to be noted that this was limited to the early period of anticoagulant therapy and that the over-all response did not drop below the suboptimal range. Also, the marked sensitivity of this patient to the anticoagulant decreased later on as his congestive failure subsided. Figure 4 illustrates an instance of extreme sensitivity to an average maintenance dose of warfarin, again occurring during the early phase of anticoagulant therapy. It is to be noted that the excessive prothrombin depression subsided without the administration of phytonadione (vitamin K_1) oxide. The latter was withheld in the absence of significant hemorrhagic manifestations and in view of the threat of recurrent pulmonary infarction posed by the persistence of congestive heart failure. Figure 4 also illustrates the desirability of maintaining a stable maintenance dose after the initial period of adjustment. Premature marked reduction of the dose results in fluctuation of the prothrombin times in and out of the optimal range.

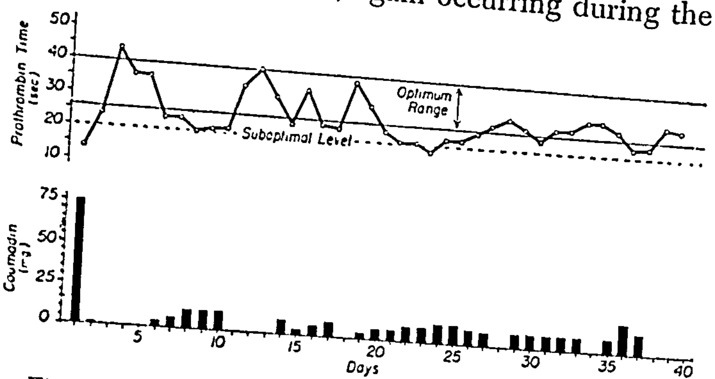

Fig. 3.—Slightly excessive response to initial single dose of warfarin (Coumadin) and erratic response to subsequent doses during early period of anticoagulant therapy.

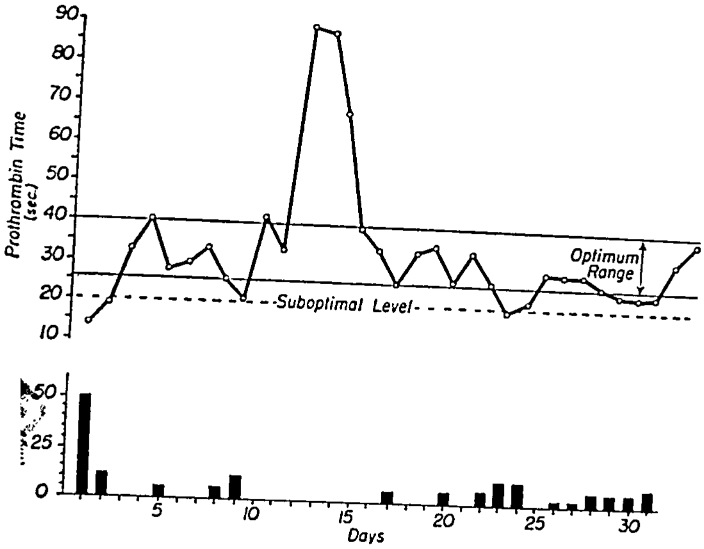

Fig. 4.—Instance of extreme sensitivity to average maintenance dose of warfarin (Coumadin) during early phase of anticoagulant therapy.

Figure 5 illustrates the course of a patient showing good response to initial administration of warfarin and good handling subsequently. The patient's prothrombin time remained in the optimal therapeutic range on stable maintenance with 7.5 mg. of warfarin for nine days. The initial period needed to reach the optimum range might have been shortened had a larger dose of the drug been given initially, but an initial prothrombin time was not available.

Figure 6 illustrates the course of a patient exhibiting a slow initial response to warfarin. A week was needed to achieve an optimal depression of prothrombin. This patient required unusually large amounts of warfarin. Probably 15 to 18 mg. would have been an adequate maintenance dose. Varying the dose frequently made for swings in and out of the optimal therapeutic range. Consequently a greater number of days show "escape." This experience suggests that the optimal individual requirements for warfarin can be best obtained by slight incremental changes of dose.

Figure 7 illustrates the course of a patient over six weeks. The initial period shows overshooting following an excessive dose with a return to better levels in two days. Subsequently, attempts to achieve a stabilizing dose required many days of observation. Days 28 to 44 illustrate a period when 7.5 mg. of warfarin was being given daily. Days 30 to 32 show a slight dip below the optimum prothrombin time. On the same dose, we then note a gradual climb to 40 seconds prothrombin time. At this time, the dose was decreased to 5 mg. and the prothrombin time returned to lower satisfactory levels.

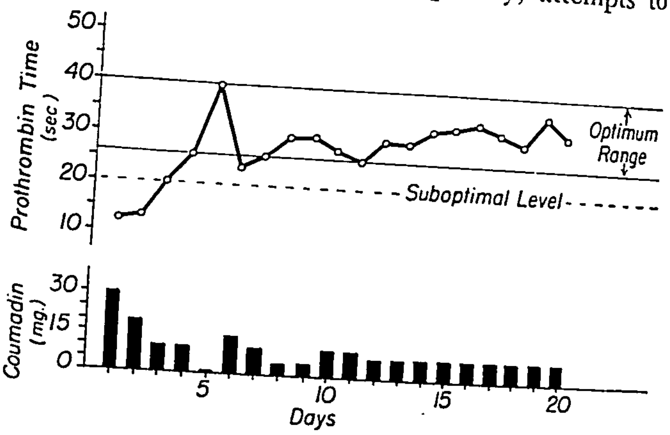

Fig. 5.—Good initial response to warfarin (Coumadin) and good subsequent handling.

A few patients observed with similar stable maintenance periods have also had single days where the prothrombin time climbed to excessive levels after a period of consistent stability. Thus fluctuation in response may occur not only in the early days of treatment but also in the subsequent days. In most cases, however, patients show a stable response to warfarin in their later days of treatment.

Summary and Conclusions

Our observations on the clinical efficacy of warfarin (Coumadin) sodium as an anticoagulant leads us to believe that we have in warfarin a drug that comes closer than the others now available to fulfilling the criteria[1] of an ideal anticoagulant. Our experience with its use in 85 patients for a total of 2,158 maintenance days has demonstrated the following facts:

Warfarin induces a fairly prompt therapeutic hypoprothrombinemia in the vast majority of patients. Optimal prothrombin time values of 25 to 40 seconds (or 2 to 3 times the control) were obtained within 36 to 48 hours in 45% of the patients and suboptimal values of 20 to 25 seconds (or 1½ times the control) in an additional 46%. Thus an apparently protective prothrombin depression was obtained within 36 to 48 hours in 91% of the patients. Optimal prothrombin time values of 25 to 40 seconds within 72 hours were obtained in 73% of the patients. If heparin administration is considered necessary for particularly rapid initial anticoagulation, it need rarely be continued for more than 18 to 24 hours.

Warfarin produces relatively well-predictable and consistent maintenance effects with infrequent total "escape" on a continuous dosage regimen. Therapeutic (optimal and suboptimal) prothrombin depression was obtainable on 93% of all maintenance days, with escape to less than 20 seconds with respect to our normal of 13 seconds on only 6% of the days. The maintenance period extended beyond four weeks in 42% of the patients.

Warfarin yields these consistent effects with relatively slight alterations of dosage. The previously recommended initial dosage of 1 mg. per. kilogram of body weight appears optimum and should, whenever possible, be administered as a single undivided dose unless there is serious indication to modify this dosage. We have found little need for excessive manipulations of the dosage during the maintenance period, after allowance has been made for the early adjustment period. The majority of patients can be well maintained in the therapeutic range with a daily dosage of 5 to 15 mg. with an average of 10 mg. per day. We have found it useful to administer the daily dose of warfarin within two to three hours after determination of the prothrombin time. Such a scheme avoids excessive responses and secondary prothrombin changes, since each prothrombin determination may in effect be an accurate guide to the effect of a previous dose.

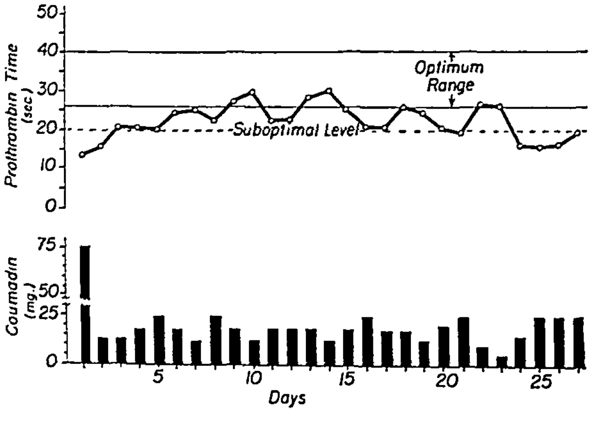

Fig. 6.—Slow initial response to warfarin (Coumadin).

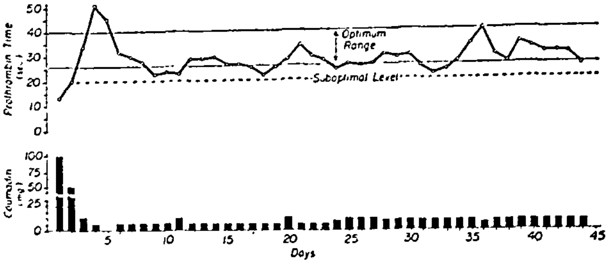

Fig. 7.—Overshooting in initial period due to excessive dosage of warfarin (Coumadin), with stabilization in two days.

Warfarin rarely causes excessive prothrombin depression of a serious nature. We encountered, in our series, only two instances of clinically manifest hemorrhage, both of minor significance, and one instance of microscopic hematuria. Excessive prothrombin depression is quickly counteracted by moderate doses of phytonadione (vitamin K_1). Warfarin produces no known systemic toxic effects. We, therefore, consider warfarin clinically a highly useful drug for both initial and long-term anticoagulant therapy.

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Massachusetts, Pennsylvania, and New Jersey have held their places in the top six states in all four surveys; Missouri has been seventh for the last three years; and Maryland and Michigan were eighth and ninth for the last two years. The three countries which were the origin of the greatest numbers of foreign physicians this year (the Philippine Islands, Canada, and Mexico) have topped the lists for the past four years; Turkey, in fourth place in 1956-1957, was fifth on the three previous lists; and Germany, in fifth place in 1956-1957, was fourth on the previous lists. The results of the last three surveys show that the largest number of foreign residents specialize in either general surgery, general medicine, or obstetrics and gynecology; the next five specialties (pathology, pediatrics, psychiatry, internal medicine, and anesthesiology) have followed the top three, in varying order, for the last three years.

TABLE 2.—*Foreign Physicians Training in Approved Hospitals in the United States, 1956-1957, by Place of Origin*

Location of Hospitals	Physicians, Total No.	Location of Hospitals	Physicians, Total No.
Argentina	139	Italy	242
Australia	26	Jamaica	10
Austria	41	Japan	253
Belgium	22	Jordan	11
Bolivia	11	Kenya	1
Brazil	96	Korea	296
British Borneo	1	Lebanon	75
British Guiana	4	Liberia	2
British Honduras	1	Luxembourg	3
British West Indies	1	Mexico	556
Bulgaria*	1	Netherlands	72
Burma	4	Netherlands West Indies	1
Canada	576	New Zealand	1
Ceylon	1	Nicaragua	27
Chile	7	Nigeria	4
China†	153	Norway	5
Colombia	107	Pakistan	13
Costa Rica	10	Panama	3
Cuba	180	Paraguay	9
yprus	14	Peru	117
oslovakia*	1	Philippine Islands	1,332
rk	7	Poland*	3
ican Republic	76	Portugal	23
r	28	Romania*	1
Egypt	47	Saar	1
El Salvador	7	Saudi Arabia	1
Federation of Malaya	3	Southern Rhodesia	2
Finland	1	Spain	127
France	28	Spanish Morocco	2
French Morocco	2	Sudan	2
Germany	324	Surinam	1
Ghana	1	Sweden	6
Gibralter	1	Switzerland	56
Greece	305	Syria	35
Guatemala	19	Thailand	41
Haiti	36	Trinidad and Tobago	11
Honduras	16	Turkey	427
Hungary*	3	Union of South Africa	18
Iceland	7	United Kingdom	103
India	203	Uruguay	1
Indonesia	3	Venezuela	13
Iran	183	Vietnam	3
Iraq	29	Yugoslavia	8
Ireland	60	Stateless	4
Israel	34	Total	6,741

* Physicians from these countries have given home addresses in other countries (not the United States).

† Includes physicians from Taiwan.

Other Surveys

Americans Studying Medicine Abroad.—The results of the most recent survey of United States citizens studying abroad, conducted by the Institute of International Education, show that 9,887 United States citizens studied in 387 institutions of higher education in 54 countries, in 1955-1956. Approximately 21% of these students (2,056) were reported to be studying medicine, in 28 different countries. Six hundred sixty-nine of the 996 American students reported in Switzerland, 319 of the 652 in Italy, 293 of the 1,358 in Canada, 174 of the 223 in the Netherlands, and 108 of the 262 in Belgium were reported to be studying medicine.

Other Professional Visitors.—The 1956-1957 surveys of foreign faculty members in the United States and American faculty members abroad, conducted by the Institute of International Education, provide additional information on international exchange in the field of medicine. Of the 1,153 foreign scholars reported in this country, 180 were listed under medicine. Of the 1,492 American scholars abroad, 81 were reported to be doing research or teaching in the field of medicine.

622 W. 168th St. (32) (Dr. McCormack).

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CLINICAL NOTES

RAPID METHOD OF DETERMINING URINARY INFECTION

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and
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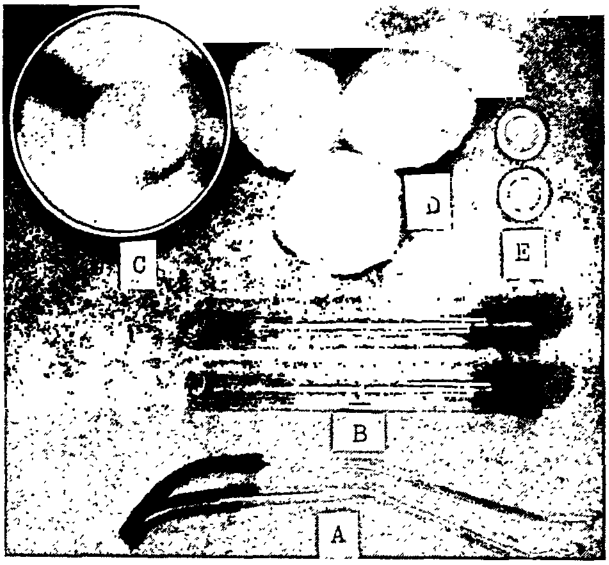
Microscopic examination of the urine is a relatively simple procedure and, when it is performed promptly and properly, can be very informative. In urinary tract infections the physician may depend upon the finding of pus cells and micro-organisms in the urine to aid him in making a diagnosis. Many methods of collecting, examining, and reporting these specimens have been recorded, but it has been our experience that unless the routine outlined is simple and definite, there will be so many sources of contamination that the results may be of little or no value. For example, a urine which has been collected at 6 a. m. and then allowed to stand at room temperature until 11 a. m. or later may show a large number and variety of micro-organisms, even if only a few contaminants were present in the fresh specimen. Hemolysis of red blood cells in urine allowed to stand at room temperature is another complication. Furthermore, a specimen which has been collected by rubber catheter from a woman, after the tip of the catheter has bent away from the meatus once or twice and has been contaminated with vaginal secretions, can hardly be expected to contain pus cells from within the urinary channels only.

To minimize these and other sources of potential error we adopted a method which has given satisfactory results over a period of five years. We claim no originality in any of the techniques. We have simply combined various suggestions from many sources in a simple routine. Perhaps it warrants more widespread trial and adoption.

We have arbitrarily named the procedure urine sterile sediment routine (SSR), and each of the following steps is considered important: In men the specimen is collected after a small amount of urine has been passed (second voided). The patient is instructed to stand if possible, to retract the foreskin, and to void into any container or the lavatory a portion of his bladder contents. While the stream is flowing he (or an orderly) catches a portion "on the fly" in a sterile test tube or centrifuge tube and corks it with a sterile rubber closure.

In women the specimen is obtained by catheterization (see figure). The patient is prepared by draping and the labia are separated and cleansed by washing with aqueous solution of benzalkonium (Zephiran) chloride. A small glass catheter (except in pregnant women past five months) is then inserted into the bladder and the first part of the urine discarded. A sterile tube is moved into the stream "on the fly," and the specimen is collected and corked. Second, all specimens for sterile sediment routine are collected between 8 a. m. and 3 p. m. and sent immediately to the bacteriology laboratory. The specimen must be examined not later than one hour after collection. Third, the specimen is centrifuged and the supernatant fluid discarded. A flamed wire loopful of the sediment is smeared on a glass slide, heat dried, Gram-stained, and examined for organisms and pus cells. A second drop is placed on a slide, covered with a cover glass, and examined for formed elements. Fourth, if more definite identification is desired, the physician asks for cultures and sensitivity tests in addition to the SSR.



Catheterization set for females: *A*, glass catheters, female: 6 by 4 ml., 6 by 5 ml.; *B*, 15 by 125 mm. test tubes with no. 0 rubber stoppers; *C*, 4-oz. iodine cup (used as container for benzalkonium); *D*, cotton balls; and *E*, rubber finger cots. Items are placed in a 4.5 by 8.5 by 3 in. metal dressing pan with cover and sterilized by autoclaving.

We find glass catheters preferable to rubber in catheterizing women for the following reasons: They are cleaner, since the fingers do not touch that portion of the catheter which is inserted into the patient, and the end does not accidentally wipe

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From the departments of urology and pathology of the Springfield Hospital and the Wesson Memorial Hospital.

over the vaginal wall; they are less painful and traumatizing, because glass is smoother than rubber; being transparent they are easily cleaned; and they are inexpensive. There is no real danger of breakage, if catheters are used properly.

An ingenious "unitized disposable plastic catheter and specimen container" was recently described.[1] We believe this equipment has two disadvantages. First, it does not allow for discarding the first specimen of urine obtained, and second, we have not yet seen any plastic catheters as smooth as the glass variety. We prefer to use the female catheterization tray illustrated. This is prepared and sterilized in the central supply of the hospital and kept ready on the floors.

We have found, as have others,[2] that a direct smear is more likely to be an accurate index of urinary tract infection than is a culture, as in any method of collection small numbers of contaminant micro-organisms may be introduced. Their growth will be abundant on the ordinary bacteriological mediums and may lead to mistaken diagnosis of infection. To show organisms microscopically they must be present in numbers approximating 100,000 per milliliter of urine. Therefore, if organisms are present in a slide preparation of an adequately collected and promptly examined specimen, they indicate infection and not accidental contamination. The culture is, of course, essential for comparison with the original report and to make sensitivity tests if requested.

Springfield Hospital, 759 Chestnut St. (7) (Dr. Doolittle).

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NEW GRASPING HOT CAUTERY ELECTRODE FOR DESTRUCTION OF RECTAL POLYPS

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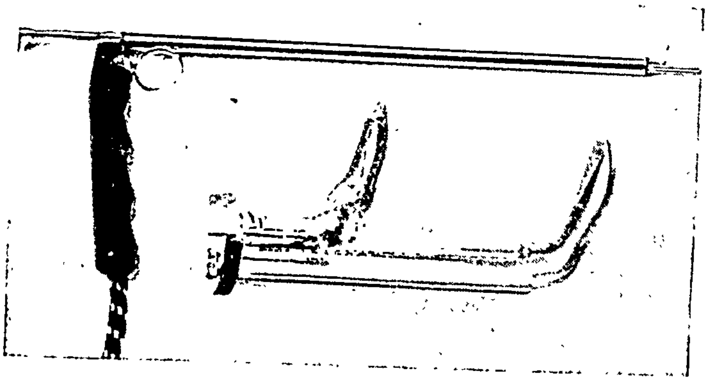
The hot cautery electrode herewith illustrated (see figure) was developed for safer and easier destruction of polyps through a proctoscope. At the present time, surgical diathermy, in spite of fundamental disadvantages, has achieved greater favor for the purpose than has hot cauterization, because of an armamentarium more highly developed for technical convenience.



Hot cautery electrode that grasps rectal polyps.

It is my conviction, both from a theoretical standpoint and from clinical experience, that cold cauterization is far more prone to result in perforation of the intestine than is thermal cauterization. This is particularly so for the occasional operator, although experts report this serious accident in such incidence that its occurrence seems to be almost inevitable in extended proctologic practice. Deep, extensive, and almost instantaneous destruction of tissue is prone to occur with diathermy, because the only guide as to what will happen is an arbitrary setting whose only meaning must be in terms relative to the actual experience of the individual and for a given set of variable conditions.

A hot cautery tip, on the other hand, can reach only a specific temperature before it burns out. An adjustment to "cherry red" or less can be quickly and accurately made by anyone and always means the same thing in terms of the common experience. Also, areas cauterized by the hot cautery method seem to be less subject to secondary hemorrhage than are those areas in which a cold instrument is used. An incidental, though not insignificant, advantage in favor of hot cautery lies in the relative cost of necessary energizing equipment.

A chief deterrent to use of thermal cautery has been the clumsiness of available cautery tips, which have been single bladed affairs without effective means of either making or keeping contact with the polyp to be destroyed. The present instrument is the first that can accurately, firmly, and continuously grasp tissue, either the body or pedicle of pedunculated polyps or the sessile variety. It may be used for repeated mild coagulation or quick thermal destruction and with only a small cautery transformer as necessary additional equipment.

547 E. Union.

MEDICAL EDUCATION in the UNITED STATES and CANADA

FIFTY-SEVENTH ANNUAL REPORT ON MEDICAL EDUCATION IN THE UNITED STATES AND CANADA BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

Edward L. Turner, M.D., Walter S. Wiggins, M.D., Glen R. Shepherd, M.D., John Hinman, M.D., and Anne Tipner

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ACKNOWLEDGEMENT

The following material constitutes the 57th Annual Report on Medical Education in the United States and Canada, as compiled by the Council on Medical Education and Hospitals of the American Medical Association. It deals specifically with undergraduate medical education, certain facets of postgraduate medical education, and those areas of technical education and training cooperating with the Council. Detailed information regarding postgraduate medical education is presented each year in a separate issue of THE JOURNAL (Aug. 17, 1957). Graduate medical education covering internships, residencies, fellowships, and certain pertinent data regarding the specialty boards is also published in a special issue of THE JOURNAL (Oct. 5, 1957).

The data presented cover the academic year 1956-1957 and have been derived from official sources in all instances. The presentation of this information has been made possible through the cooperation of medical school and university officials, government agencies, and the officers of the technical organization included. The Council on Medical Education and Hospials desires to express its appreciation to those individuals and organizations who have cooperated so effectively in furnishing the information on which this current report is based.

THE CHANGING DIMENSIONS OF MEDICAL SCIENCE AND THEIR IMPLICATION IN MEDICAL EDUCATION

The June 1, 1957, issue of The Journal presented a group of papers delivered before the 53rd Annual Congress on Medical Education and Licensure (Feb. 11, 1957) highlighting some of the problems and challenges confronting medical education. Those papers, prepared and delivered by Weiskotten,[1] Whitehorn,[2] Atchley,[3] Cope,[4] Wood,[5] and Dempsey[6] merit careful reading and serious study by all individuals interested in and concerned with medical education and medical practice. In fact, they might well be classified in the category of "required reading" on the part of the medical profession at large as well as those engaged specifically in medical education and research. If space permitted, the Council on Medical Education and Hospitals would be pleased to present this group of papers as the introductory background for this annual report.

In presenting his comments on "The Underlying Cause of Unrest in University Medicine," Wood[5] characterizes present-day medicine by its state of intense ferment and the climate of unrest that pervades the profession. Rather than relate this situation to medical economics, group practice, full-time clinical faculties, or the changing pattern of disease, he presents the idea that "the real cause of our present unrest is the rapidly changing dimensions of medical science." These dimensions involve the Euclidean geometric factors of depth, breadth, and length and the Einsteinian fourth dimension of time.

No thinking individual can deny that modern medical education, research, and practice require a depth of knowledge today that was not even dreamed of a relatively short time ago. Modern medicine is not an isolated empirical entity, but borrows to an increasing extent from sciences and humanities on all sides (biology, chemistry, physics, sociology, philosophy, etc.) as its breadth expands. Physicians are not in a position to understand fully their patients without reasonable familiarity with the multitude of possible environmental factors of illness. In fact, medicine has been defined "as a study of the interaction of man and his environment." Wood points out that as depth and breadth of knowledge in medical science has advanced "the most important practical problem confronting medicine today is that created by the excessive length of time required to train a modern physician." Thus he states:

> As the depth and breadth of knowledge in medical science have increased, the combined undergraduate-postgraduate courses [graduate] in medical schools and hospitals have become longer and longer. In this country, physicians and surgeons are considered well qualified to practice only after they have completed 4 years of college, 4 years of medical school, and an additional 3 or more years in a hospital—a total of at least 11 years after high school. When two years of compulsory military training are added, many doctors of medicine have reached the age of 30 before they have finished their formal education. Those interested in research have spent a number of their most promising years merely preparing for their careers. This demanding period of training, with its inevitable economic strain, has become so long that it is beginning to discourage candidates from entering the field of medicine. The relative number of students applying for admission to medical schools, as compared to those applying for training in other professions, has been definitely on the decrease [Stalnaker[7]]. Furthermore, there is good evidence that the excellence of practicing doctors is related, in part at least, to the length and quality of their postgraduate [graduate] training as house officers. Under the present prolonged curriculum of undergraduate medical education, many young physicians are forced, for economic reasons, to enter private practice before they have gained adequate experience in hospital residencies. Such short-cuts to practice, in this age of expanding science, deprive society of the maximal return on its investment in medical manpower.

Depth and breadth of knowledge in medical science as well as in socioeconomic areas impinging upon medicine have increased the length of time involved in adequate preparation for all phases of medical activity. These changing dimensions in medicine present continuing challenges to those engaged in education, research, and practice. In the rapidly changing dynamic setting of medicine in modern society efforts must be continued towards producing, as nearly as possible, the ideal physician to whom Atchley[3] refers. This may be done through the selection of cultivated men and women and then stimulating in them a humanistic response through precept and example, along with providing the opportunity for them to become scientists capable of coping with their evolving discipline through experience gained in "an atmosphere of sound critical thinking in an environment dedicated to advancing the science that is the physician's unique contribution to man's health and happiness."

CURRICULUM PLANNING AND REVISION

Evidence of the increasing attention being given to problems in medical education and practice created by these changing dimensions is not manifested solely by unrest per se but also through the study and educational experimentation currently under way in medical schools throughout the nation. Several examples of the type of study and action being conducted are reported in the following paragraphs.

One of the more recent developments of interest is the proposed revision of the program of medical education at Johns Hopkins University.[8] The faculty of this institution has reviewed the evolution of the American system of medical education and, in light of its experiences, noted the emergence of certain serious defects. The three most important of these are considered to be (1) the excessive number of years required to train a physician, (2) the dichotomy existing between the liberal arts and the medical sciences, and (3) the noticeable decline of strength that has developed in recent years in the basic science departments of medical schools. The projected Revised Program of the Johns Hopkins University is directed toward counteracting, as far as possible, the three basic shortcomings previously noted.

In brief, the schedules for the first four years of the medical curriculum in this five-year program would be based on an academic year increased from 32 to 40 weeks, and the fifth year, representing a rotating internship in the Johns Hopkins Hospital, would cover an entire calendar (52-week) year. However, in place of the current degree requirement for admission, carefully selected students may be admitted to this five-year program after two years of college. This will make it possible for the talented student to complete the cycle of college–medical school–internship in seven years rather than in the nine years now involved when a college degree is included as an admission requirement. At the same time this Revised Program offers opportunities for other students to enter after either three or the usual four years of college. A liberal education is provided through interdigitation of courses in the humanities and the medical sciences. Basically this Revised Program will (*a*) shorten the course of training by one or two years, (*b*) reduce the total cost of medical education through this time reduction, and (*c*) increase emphasis on creative and independent study. The curriculum is so designed that during the five years the "iron curtain" barrier between liberal arts and medical science will be broken, it is believed, to the mutual advantage of the medical school and of the rest of the university. It should be reflected in elevation of academic standards of premedical courses in the natural sciences and tend to eliminate current unnecessary duplications of effort. The program is designed to offer unusually favorable opportunities for students to engage in research during their formative years in medical school. Social science instruction in the university should improve through enhanced opportunities in the humanistic and sociological problems of medicine.

This program, permitting students selected for early admission to medical school to continue their college education along with the study of medicine, should augment interest and meaning in the significance and values of the liberal arts. In view of the serious thought and discussions of recent years focused on the relative merits of the internship in the medical education center setting, the Johns Hopkins University Revised Program presents one potential solution. In recent years, good undergraduate senior student clerkships have, in many instances, become the equivalent of excellent rotating internships. The requirement of an additional year of internship, rotating or otherwise, has therefore, in some instances become a duplication of effort. Undoubtedly, in some settings the clerkship, because of its careful supervision, has been the more valuable of the two experiences. In the Johns Hopkins University proposal, the fifth-year student would become a rotating intern in the Johns Hopkins Hospital, carrying a 52-week, 24-hour responsibility for patients. This assignment would include a two-month elective period during which the student might choose to undertake special work in basic science or additional clinical training in any one of the various departments in the hospital. Shortening the total cycle of training will permit a larger proportion of graduates to obtain optimal graduate experiences in hospital residencies and may also encourage more individuals to pursue careers in the basic medical sciences. It is anticipated that this full program cannot be put into effect until 1959, as it is dependent upon construction of new basic science facilities.

The Harvard *Medical Alumni Bulletin* for April, 1957,[9] presented a rearrangement of the first two years of the medical course at Harvard Medical School. This is the result of frequent reappraisals of the teaching program and the recommendations of an *ad hoc* committee which conducted its activities during three phases. During the initial phase, the curriculum was analyzed course by course as the committee familiarized itself with the outlook, aims, programs, and problems of each department. Subsequently, the committee worked on the evolution of a course which it believed might represent the optimal educational format for the first two years of medicine. These studies were reported to the faculty early in 1956 and the recommendations were received with considerable enthusiasm. Later, the committee was enlarged to bring about "the broadest possible spectrum of opinion," as the details of implementing the suggested revisions were developed. In February, 1957, the faculty approved in principle the report and recommendations of the *ad hoc* committee.

As has been the experience of others, the committee found the necessity for maintaining a reasonable balance between enthusiasms for a possible new venture and the appreciation of an already proved achievement. The importance of improved interdepartmental communication at all levels, including the younger teachers, was highlighted. The values of appropriate timing in subject matter as well as consideration of the importance of initially offering students contact with the philosophy, methods, and contributions of separate established basic disciplines prior to attempting a unified approach to problems of human biology were carefully studied. Other factors were considered, such as the merits of reduction in didactic teaching in favor of increased free time for students and the encouragement of wider scientific reading, the pros and cons of a broader tutorial system in hastening the orientation of the student and in aiding him to utilize free time advantageously, the importance of active cooperation among inherently strong individual departments, and the need to envolve a curriculum that preserved time for the faculty to conduct research.

Although the Harvard curriculum rearrangement does not represent a radical departure, it does present an excellent effort to balance effectively the presentation of principles of various disciplines and correlative teaching during the first two years. Its chief objective has been to provide a framework within which the departments can cooperate most successfully in the presentation of subject matter when such cooperation might enhance the presentation. It allows for extreme flexibility, and the Harvard faculty anticipate that there will be a continued evolution of the best ways of presenting the basic medical sciences to their students.

The suggestions and readjustments emanating from the studies being conducted by curriculum and faculty committees in the medical schools vary from modest readjustments to major reorganization, such as has already been indicated in the Johns Hopkins Revised Program. At Baylor University, the curriculum committee has completed a major revision of the second year, effective for 1957-1958, to facilitate extension of the comprehensive method of teaching and examination. This is a continuation of the revision made in the first year program in 1953-1954 centering around concurrent teaching of anatomy, physiology, and biochemistry throughout the year. The success of this earlier correlative effort was felt to lie in better evolution of a student of "medicine," rather than that of a "graduate student." The readjusted second-year program schedules courses to run concurrently throughout the year and replaces the block system whereby some courses are completed prior to the initiation of others.

The so-called block system has had support as well as opposition from teachers and investigators for many years. The difficulties of correlation presented at some stages of medical education through the block system are readily apparent. Prolonged concurrent instruction, although enhancing the potentialities of interdepartmental correlation, may on the other hand be less economical from the standpoint of faculty teaching and research time. Medical schools will be interested in further reports on this readjusted program after sufficient time elapses to permit its comparative analysis.

The Honors Program at New York University, which was briefly mentioned in last year's report, has completed its first year of operation. This program was designed for selected students who desire to prepare themselves for careers in medical research and teaching. It permits a high degree of flexibility of the medical curriculum, a broad introduction to modern research in biology and medicine, and an opportunity for independent study and research training in areas of the student's own interests. The program is varied in its details to suit the needs and aims of the individual student. It should be a valuable background for investigation or research in either basic medical science or clinical areas. A seminar program open to all interested medical students in good standing and desirous of undertaking the extra work involved is conducted during the first two years of medical school. A weekly course of lectures and seminars dealing with various aspects of medical research is offered presenting subjects, broad in scope, frequently dealing with investigations in areas not covered in the usual medical school curriculum. Participating students have faculty advisors during their first year and subsequently meet with them informally and periodically to discuss the student's reading, research interests, summer plans, and electives. Bi-monthly participation in a Journal Club is also part of the program.

During spare time and summer vacation in the first two years, students have opportunities to become actively associated with a laboratory problem under the stimulus and guidance of a faculty member. Financial support is available for the students who wish to participate in research during the summer period. By the end of the second year, some students will have chosen a field of research interest and enter the Honors Program itself while others may defer their decisions to the end of the third year. According to the plan, candidate selection will be based on intellectual ability, motivation, and general suitability, with relatively few students becoming candidates for a degree with honors. The central focus of the Honors Program is a year of intensive research training. During this period the student will spend essentially full time in active laboratory investigation in an area of his choice, supported by a predoctoral research fellowship adequate to defray tuition and living expenses. After completion of this Medical Sciences Year the student will return to the regular third-or-fourth-year course and will have additional elective time available for his research. Completion of this Medical Sciences Year together with submission of a thesis indicating evidence of original and independent work will make students eligible for the M.D. degree with honors in their chosen branch of medical science.

During the first trimester, 12 students in the first-year class and 10 in the second-year group participated in this program. During the year other students applied, so that at the time the Honors Program Committee submitted its annual report, 20 first-year and 12 second-year students were enrolled. The list of 33 scientists who spearheaded the Saturday morning lectures and seminars and the topics covered by them would indicate that the students in this program enjoyed a rare and stimulating opportunity. The follow-through of this Honors

Program experiment will be observed with interest during the course of the next several years, particularly in relation to its potentialities in augmenting the ranks of basic medical science personnel.

The University of Virginia received a grant of $75,000 from the Public Health Service to implement a program in which selected medical students may, at the end of the second year, elect to spend three more years in medical school, during which period half their time will be spent in one of the basic science departments and the other half in completing the regular clinical assignments of the medical curriculum. The 18 months thus allocated to the basic science departments will be in blocks of at least 6 months and will be devoted to learning the methods of research, selected courses, active conduct of research, and preparation of a thesis. The objective here is to offer such students an unusual opportunity to prepare themselves for academic careers in medicine and at the same time contribute to the enrichment of the departments in which they work.

Several other medical schools have received grants from the Public Health Service to utilize research training in basic medical and allied fields, in what is essentially an experimental training program directed toward investigating the ways and means whereby medical students could receive such training early in their professional life. Currently such efforts are being pursued, in addition to New York University and the University of Virginia, at the University of Pennsylvania, University of Rochester, Emory University, Washington University at St. Louis, Johns Hopkins University, and the University of Washington.

At the University of Wisconsin, curriculum planning for the clinical years has effectively moved forward. Teaching time for psychiatry and pediatrics has been augmented. Arrangements have been consummated between the university and other hospitals in Madison whereby they are integrated into the educational programs in pediatrics and obstetrics-gynecology. This has made it possible to terminate the former arrangements in which undergraduate students received part of the obstetric and gynecologic experience at the Chicago Maternity Center and now focuses all undergraduate and graduate training in this area, in Madison. The University of Wisconsin has also been conducting an evaluation of their preceptor program through the assistance of a grant from the Rockefeller Foundation. The results of this study of what is the oldest of the currently operating preceptor programs in American medical schools will be of general interest to medical educators. The annual report from the University of Wisconsin indicates that alumni and medical students who had completed the preceptorship believed it to be an essential part of their education.

The University of Southern California reports that their curriculum committee has planned, and the faculty activated, a new "continuity" outpatient clinic in the fourth year. Each student will see and follow patients in a general medical clinic one half-day per week throughout the entire year. At Stanford, a Division of Physical Therapy has been incorporated into the School of Medicine. In the first year at Yale, provision has been made for an integrated program in basic neurology, replacing the instruction in neuroanatomy and neurophysiology formerly given separately. The field of neurology offers an unusually good opportunity for this type of integration which has apparently been successfully utilized by several medical schools during recent years.

Beginning with 1956-1957, Miami inaugurated a curriculum adjustment which encourages cooperation and integration between the basic medical science and clinical departments. Clinical correlation conferences are now utilized weekly to emphasize the clinical application of basic concepts in anatomy, biochemistry, and physiology. Such correlation conferences have been established in many medical schools during recent years. Reports indicate that they have met with varying degrees of success which undoubtedly is largely dependent upon the imagination, teaching ability, interest, and skill of the leadership they enjoy.

The University of Chicago has realigned its fourth-year program, essentially as follows. During the first quarter students serve half-time on obstetrics and gynecology clerkship and have the remaining half-time for their senior electives. During the second quarter, which is the "free" quarter, they may take electives, participate in research, serve as teaching assistants, or work in a hospital or medical school laboratory. The third and fourth quarters are devoted to a combined medicine, psychiatry, surgery experience involving full-time externship in the outpatient department. Correlative pathology is given throughout the senior year.

At Indiana University, active faculty curriculum planning and program activation has been under way for the past three and one-half years. The problems of immediate concern involve the move of the first year of medicine from the Bloomington campus to the medical campus in Indianapolis, which is currently scheduled for June, 1958.

Albert Einstein College of Medicine has planned and activated a Ph.D. program in medical sciences. A new graduate school for advanced study and research in the medical sciences at Albert Einstein College of Medicine was recently announced by the President of Yeshiva University. It will be known as the Sue Golding Graduate Division of Medical Sciences and is dedicated to assist in alleviating the serious shortage of trained investigators in the basic medical sciences. This new College of Medicine, which has just completed its first two years of teach-

Medical Colleges also approved this statement so that it now serves as a joint document of principles. It is in the process of printing for distribution to all institutions concerned to be used in place of the "Essentials of an Acceptable Medical School." It is intended that this statement will be used as a guide with the hope that it may assist in attaining medical education of ever higher standards, which are best nurtured in an environment not excessively concerned with standardization. The concepts which are expressed in the Functions and Structure of a Modern Medical School will serve as general rather than specific criteria in medical school accreditation.

A GUIDE REGARDING OBJECTIVES AND BASIC PRINCIPLES OF POSTGRADUATE MEDICAL EDUCATION PROGRAMS

Because of increasing interest and concern in the area of postgraduate and continuing education, the Council on Medical Education and Hospitals early in 1956 obtained from the Board of Trustees of the American Medical Association authorization to appoint an *Ad Hoc* Advisory Committee on Postgraduate Medical Education. This committee initiated its studies in April, 1956. It was requested to examine postgraduate medical education in its broadest aspects and to recommend to the Council a course of action that the American Medical Association might take that would be of assistance in improving the educational stature of this increasingly important field. It became apparent during the committee's early deliberations that a basic guide was needed which would be applicable to courses, as well as to other approaches in postgraduate medical education. Consequently, as its first major task the *Ad Hoc* Advisory Committee prepared "A Guide Regarding Objectives and Basic Principles of Postgraduate Medical Educational Programs"[12] as a contribution to an initial clarification of goals and guiding principles in this continuing phase of medical education. This guide, on recommendation of the Council, was approved by the House of Delegates in June, 1957. The guide has subsequently been published and widely distributed. In addition to objectives, the guide considers administration, budget, teaching staff, curriculum, facilities, educational methods, means of evaluating program effectiveness, and rewards as appropriate for postgraduate study.

The *Ad Hoc* Committee on Postgraduate Medical Education will continue its studies and will give particular attention to ways and means of possible evaluation of educational efforts in this field.

ADMISSION REQUIREMENTS OF AMERICAN MEDICAL SCHOOLS, 1957-1958

The Committee on Educational Research and Service of the Association of American Medical Colleges has prepared and published the eighth revision of "Admission Requirements of American Medical Colleges—1957-1958".[13] This volume contains a great deal of detailed information on each medical school as well as general information on the medical school admission process. The manner in which the data have been kept current through annual revisions makes this publication a valuable compendium of facts on premedical preparation in general and the admission policies of each medical school in particular. In the 1957-1958 revision the Canadian medical schools are included for the first time.

STRAIGHT INTERNSHIPS VS. ROTATING INTERNSHIPS

In 1952, the Advisory Committee on Internships following a prolonged and careful study submitted a report to the Council on Medical Education and Hospitals in which they favored the rotating internship over the straight internship as the generally most desirable initial training experience beyond medical school. Again in 1954, an *Ad Hoc* Committee on Internships, after an exhaustive study of the various controversial aspects of the internship, arrived at similar conclusions. In the 1955 revision of the "Essentials of an Approved Internship" the Council on Medical Education and Hospitals stated: "It is the opinion of the Council that the best basic education is provided by a well-organized and conducted rotating internship." The Council, however, continued to approve straight internships in medicine, surgery, pediatrics, and pathology, believing that such experiences may be justified in these fields for medical school graduates who have definitely determined to follow a specialized or academic career.

There continued to be a great deal of concern over the internship situation. In June, 1956, the House of Delegates of the American Medical Association adopted a report from its Reference Committee on Medical Education and Hospitals which requested the Council on Medical Education and Hospitals. to (1) increase its efforts to encourage rotating internships rather than straight internships in all hospitals approved for the latter and (2) to submit a report of the results of this effort annually. Pending clarification of this situation, the Council approved no new applications for straight internships after June, 1956. In order that the Council might have adequate data and opinions on which to base a subsequent report to the House of Delegates, communications were sent to the administrator of each hospital offering approved straight internships, requesting a statement regarding the attitude toward such programs and indicating whether or not they should be discontinued in favor of rotating internships. The communication requested that the administrator take the matter up with the chief of each service conducting approved straight internships and also with the chairman of the Intern Committee, in order that their views might be fully considered in the expression of opinion for the hospital.

As might be anticipated, in consideration of an issue of this nature, the replies were varied from calm, objective, and constructive analyses to emotional and even vitriolic comments of little or no assistance. The majority of the replies were exceedingly valuable in making it possible to analyze the pros and cons of arguments regarding straight and rotating internships in the setting afforded by this group of hospitals. A summarization of these opinions was carefully considered by the Council on Medical Education and Hospitals and presented to the House of Delegates of the American Medical Association in June, 1957. The Reference Committee on Medical Education and Hospitals in reporting to the House of Delegates indicated that it agreed with the Council on Medical Education and Hospitals that "straight internships of superior educational content are justified in the fields of medicine, surgery, pediatrics, and pathology because of their comprehensive scope." The committee, however, emphasized that this was not a refutation of previous actions of the House of Delegates and that it was still convinced that a sound well-organized rotating internship meets the present needs of medical education in a superior manner to the straight internship. The Council was requested to continue the encouragement of good rotating internships and to recognize straight internships only in situations of superior content and for the purpose of studying new methods of medical education. The reference committee also recommended that the Council on Medical Education and Hospitals be authorized to consider applications for straight internships in obstetrics and gynecology on the basis of educational merit in a manner similar to straight internships in medicine, surgery, pathology, and pediatrics. These recommendations were adopted by the House of Delegates.

Because of the changing values in the undergraduate clinical clerkship, the over-all length of medical education, the difficulties in organization and supervision of thoroughly excellent internships, whether rotating or straight, and many other factors, it seems probable that this facet of medical education will continue to be the focal point of considerable attention in the years ahead. Experimentation of the type suggested in the Johns Hopkins Revised Program will place a well organized and well supervised rotating internship experience within the fabric of the undergraduate curriculum itself. This approach differs from earlier situations requiring the internship before granting the medical degree by placing this rotating clinical experience within the curriculum and by conducting the program in the hospital which is an integral part of the medical school.

FOCUS ON THE FUTURE

MEDICAL SCHOOL INQUIRY, COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE, HOUSE OF REPRESENTATIVES–EIGHTY-FIFTH CONGRESS

On July 10, 1956, the Committee on Interstate and Foreign Commerce directed its professional staff "to gather all possible information bearing on the subject of Federal aid to medical schools and report to the committee early in the next Congress." This action was taken during the consideration of a bill (S849) which was designed to provide assistance to nonfederal institutions for the construction of health research facilities. It was the committee's decision that this bill (S849) should not be broadened to include matching grants for the construction of teaching facilities at medical schools and that separate legislation to this effect would be considered by the committee during the 85th Congress. S849 was enacted into law as Public Law 835, 84th Congress, and it contained no provision for federal assistance for construction of medical school teaching facilities.

The Staff Report to the Committee on Interstate and Foreign Commerce, House of Representatives, 85th Congress [14] was released during the Spring (1957). The report, covering 479 pages, includes, in addition to background introductory data, sections on medical schools, dental, and dental hygiene schools, osteopathic colleges, schools of public health, and an extensive appendix of sources and supplementary material. The authors of this report have brought together an enormous amount of factual data relevant to their assignment and have presented it in the question-answer format which in the medical school section alone involves 167 queries. These questions and answers are cross indexed with the appendical data. The medical school section is divided into three subsections dealing with (1) present and future capacity of medical schools, (2) graduates of medical schools and physician requirements, and (3) financial aspects of medical schools and medical students. This report is a valuable reference, not only for the Committee on Interstate and Foreign Commerce but also for handy reference to a large amount of authentic factual information on schools of medicine, dentistry, osteopathy, and public health which has been collected from a number of sources.

HEALTH MANPOWER CHART BOOK

The "Health Manpower Chart Book" [15] prepared by the Division of Public Health Methods of the Public Health Service, Department of Health, Education, and Welfare as Public Health Service Publication 511, was originally prepared for limited distribution at the Oct. 24, 1956, meeting of the National Advisory Health Council. Following some revision it was printed for general distribution to the schools of the health professions and to persons interested in the provision of health services to the

It would appear to be desirable to undertake a broad-gauge objective analysis of this entire field directed toward more clearly defining trends and possible personnel needs. Such an analysis might well include an evaluation of potential sites for development of new medical schools as well as stimulation of increased interest on the part of institutions of higher education to engage in such ventures.

The 54th Congress on Medical Education and Licensure to be held Feb. 9-11, 1958, at the Palmer House in Chicago, will focus attention on the factors of importance which impinge on medical education and practice in this changing scene. Efforts will be made to determine some of the questions which need to be further examined and clarified and to discuss possible approaches to their solutions during the years ahead.

BACKGROUND PREPARATION FOR GENERAL PRACTICE

At the meeting of the House of Delegates of the American Medical Association in Seattle, Nov. 27-30, 1956, the Committee on Medical Practice presented a report in which was included a recommendation for the establishment of a study group to consider the best background preparation for general practice. At its meeting on Dec. 14, 1956, the Executive Committee of the Board of Trustees voted that the Council on Medical Education and Hospitals address itself to this matter and that it form a study group with representatives of the Council, the Association of American Medical Colleges, and the American Academy of General Practice, and representatives of the specialty areas and proceed "to objectively analyze and make recommendations as to the best background preparation today for general practice."

Subsequently, a committee known as the Committee on Preparation for General Practice was established with representatives from the Council, the Association of American Medical Colleges, and the American Academy of General Practice. It was believed that the initial deliberations should be conducted with this type of representation and that representatives from various specialty fields should be brought in as the studies progressed. At the initial meeting in January, 1957, the committee agreed to consider the following four questions: 1. What is general practice? 2. Is what is defined as general practice of lasting value to the health care of the United States public? 3. What preparation is needed for this type of practice? 4. How can the preparation best be offered? Three subcommittees were appointed to study specific assignments dealing with these questions. These subcommittees have held several meetings, and, at the time of publication of this annual report, the parent committee has met on several occasions.

Tied in with the consideration of this matter are the background activities and the reports of the Committee on General Practice Prior to Specialization. In the study of its assignment, this committee considered the following specific questions: (1) Is general practice prior to specialization desirable? (2) Is it practical? (3) If so, how can it be implemented? During the course of these studies, the committee met with representatives of all of the specialty boards, the Council on Medical Education and Hospitals, and the American Academy of General Practice. At the June 6, 1957, meeting, the committee submitted majority and minority reports to the Board of Trustees and House of Delegates, the majority report being recommended by the Reference Committee on Medical Education and Hospitals for adoption with such action subsequently being taken. In essence, this report referred to the fact that "the studies, conclusions, and recommendations of this new committee (Committee on Preparation for General Practice) appear to be basic to any further consideration of the possible role of general practice prior to specialization." It was recommended "that this new committee in its long term cooperative study with appropriate groups, give full consideration to the importance of a broad background of training and experience for all physicians in the care of the patient as a whole and of the family as a unit." The report, furthermore, recommended that the Committee on General Practice Prior to Specialization be discharged and any further pursuit of studies in this field be referred to the joint committee of the Council on Medical Education and Hospitals, Association of American Medical Colleges, and the American Academy of General Practice. This committee has an interesting and challenging opportunity in the further study of this over-all problem during the year ahead.

SECOND WORLD CONFERENCE ON MEDICAL EDUCATION

The Second World Conference on Medical Education is scheduled to be held in Chicago during the first week of September, 1959. "Medicine–A Life-Long Study" has been adopted as the theme for this conference, with special emphasis directed toward medical education beyond the medical school. The program will consider such areas as (*a*) basic clinical training for all doctors; (*b*) advance clinical training for general and specialty practice; (*c*) training for teaching and research; and (*d*) continuing medical education. Participants in the Second World Conference on Medical Education will include leaders in this field from nations throughout the world. The conference will offer an unusual opportunity for the first-hand exchange of information on the progress and problems encountered in the field of medical education and research as scholars in medicine from all parts of the world gather together.

APPROVED MEDICAL SCHOOLS

During the academic year 1956-1957, the schools of medicine of the University of Mississippi and the University of Missouri graduated their first classes. They were both granted full approval as four-year medical schools, increasing the number of such institutions in the United States to 78. Since both were previously approved schools of basic medical sciences, the number of schools in this category is now reduced to four.

The University of Saskatchewan College of Medicine in Canada also completed its expansion to a full four-year program and was granted approval. All 12 medical schools in Canada are now approved four-year institutions.

Table 3 lists by states the approved four-year medical schools and the schools of basic medical sciences, indicating whether publicly or privately owned, year of organization, and other pertinent data. Similar data is presented for newly developing medical schools. Similar information concerning Canadian schools is given in table 4.

The Albert Einstein College of Medicine in New York City has had in operation the first two years of its planned four-year program and this fall initiated the third year. On the basis of a Liaison Committee survey visit, it was granted provisional approval and will be eligible for full approval on implementation of the four-year program in 1958-1959.

NEWLY DEVELOPING MEDICAL SCHOOLS

New medical schools in the active process of development include Albert Einstein College of Medicine in New York City, Seton Hall College of Medicine and Dentistry in Jersey City, and the University of Florida College of Medicine in Gainesville, Fla. At Albert Einstein, the initial class has completed two years of study. At Seton Hall and the University of Florida, initial classes have completed their first year of study.

The contract for the construction of the teaching hospital for the Medical Center at West Virginia University has been executed recently and it is expected that the project will be completed in 1960. Students will be able to undertake their clinical studies in the expanded institution beginning in September, 1960. In last year's annual report, it was estimated that the expansion would have occurred in time to enroll third-year students in September, 1959.

The initial administrative staff has been assembled in Lexington for the medical school at the University of Kentucky. Present planning calls for admitting the first class in 1959 or 1960.

Interest in the development of a medical school as part of the University of Connecticut has been mentioned in earlier reports. The Council is not currently aware of any final decisions in regard to this possible development. Correspondence from various sources indicates an initial consideration of the potentiality of construction of medical school facilities in San Antonio, Texas, and Toledo, Ohio. There is also evident interest in the possibility of developing a school of basic medical sciences in Arizona and in New Mexico.

CONSTRUCTION OF FACILITIES, 1956-1957

Thirty-three schools reported either the initiation or completion of major construction projects during 1956-1957, while 49 institutions indicated neither initiation nor completion of major construction projects during this period. Major projects initiated include the construction of the auditorium, lecture rooms, and dormitory facilities and expansion of physical medicine and rehabilitation at New York University; the teaching and research hospital developed at Ohio State University; the basic science research laboratories at the University of Cincinnati; and the University of Pittsburgh teaching and research facilities. In all, 19 medical schools reported the initiation of construction projects estimated to cost approximately $32,200,000.

Twenty of the 33 schools reporting construction activities indicated the completion of projects during 1956-1957, representing an investment of $67,500,000. These include completion of the basic science teaching and research building at Howard University, the medical science building at the University of Florida, Emory University's building to house its geographical full-time faculty, completion of the University of Missouri Medical School–Hospital plant and related facilities, and the construction of the research wing at the University of Buffalo Medical School. Others include the development of residence facilities for students, interns, residents, and nurses at New York University, the construction of psychiatric facilities at the University of North Carolina, completion of the inpatient, outpatient ancillary facilities at Temple University, faculty housing and power plant at the University of Texas (Galveston), the completion of the basic science building at West Virginia University, and the anatomic teaching and research and biochemistry teaching and research laboratories and animal quarters at the University of Wisconsin. Significant new construction, modernization, or refurbishing has been accomplished in the other institutions reporting completion of construction during this period.

MEDICAL SCHOOL FINANCING

This year information on medical school financing was sought only as it pertained to the amount and source of anticipated operating income for the academic year 1957-1958. The inquiry was expanded to include anticipated income from clinical activities for support of medical school operations. Study of the responses makes it evident that changes in the form and content of the inquiries

It would appear to be desirable to undertake a broad-gauge objective analysis of this entire field directed toward more clearly defining trends and possible personnel needs. Such an analysis might well include an evaluation of potential sites for development of new medical schools as well as stimulation of increased interest on the part of institutions of higher education to engage in such ventures.

The 54th Congress on Medical Education and Licensure to be held Feb. 9-11, 1958, at the Palmer House in Chicago, will focus attention on the factors of importance which impinge on medical education and practice in this changing scene. Efforts will be made to determine some of the questions which need to be further examined and clarified and to discuss possible approaches to their solutions during the years ahead.

BACKGROUND PREPARATION FOR GENERAL PRACTICE

At the meeting of the House of Delegates of the American Medical Association in Seattle, Nov. 27-30, 1956, the Committee on Medical Practice presented a report in which was included a recommendation for the establishment of a study group to consider the best background preparation for general practice. At its meeting on Dec. 14, 1956, the Executive Committee of the Board of Trustees voted that the Council on Medical Education and Hospitals address itself to this matter and that it form a study group with representatives of the Council, the Association of American Medical Colleges, and the American Academy of General Practice, and representatives of the specialty areas and proceed "to objectively analyze and make recommendations as to the best background preparation today for general practice."

Subsequently, a committee known as the Committee on Preparation for General Practice was established with representatives from the Council, the Association of American Medical Colleges, and the American Academy of General Practice. It was believed that the initial deliberations should be conducted with this type of representation and that representatives from various specialty fields should be brought in as the studies progressed. At the initial meeting in January, 1957, the committee agreed to consider the following four questions: 1. What is general practice? 2. Is what is defined as general practice of lasting value to the health care of the United States public? 3. What preparation is needed for this type of practice? 4. How can the preparation best be offered? Three subcommittees were appointed to study specific assignments dealing with these questions. These subcommittees have held several meetings, and, at the time of publication of this annual report, the parent committee has met on several occasions.

Tied in with the consideration of this matter are the background activities and the reports of the Committee on General Practice Prior to Specialization. In the study of its assignment, this committee considered the following specific questions: (1) Is general practice prior to specialization desirable? (2) Is it practical? (3) If so, how can it be implemented? During the course of these studies, the committee met with representatives of all of the specialty boards, the Council on Medical Education and Hospitals, and the American Academy of General Practice. At the June 6, 1957, meeting, the committee submitted majority and minority reports to the Board of Trustees and House of Delegates, the majority report being recommended by the Reference Committee on Medical Education and Hospitals for adoption with such action subsequently being taken. In essence, this report referred to the fact that "the studies, conclusions, and recommendations of this new committee (Committee on Preparation for General Practice) appear to be basic to any further consideration of the possible role of general practice prior to specialization." It was recommended "that this new committee in its long term cooperative study with appropriate groups, give full consideration to the importance of a broad background of training and experience for all physicians in the care of the patient as a whole and of the family as a unit." The report, furthermore, recommended that the Committee on General Practice Prior to Specialization be discharged and any further pursuit of studies in this field be referred to the joint committee of the Council on Medical Education and Hospitals, Association of American Medical Colleges, and the American Academy of General Practice. This committee has an interesting and challenging opportunity in the further study of this over-all problem during the year ahead.

SECOND WORLD CONFERENCE ON MEDICAL EDUCATION

The Second World Conference on Medical Education is scheduled to be held in Chicago during the first week of September, 1959. "Medicine–A Life-Long Study" has been adopted as the theme for this conference, with special emphasis directed toward medical education beyond the medical school. The program will consider such areas as (*a*) basic clinical training for all doctors; (*b*) advance clinical training for general and specialty practice; (*c*) training for teaching and research; and (*d*) continuing medical education. Participants in the Second World Conference on Medical Education will include leaders in this field from nations throughout the world. The conference will offer an unusual opportunity for the first-hand exchange of information on the progress and problems encountered in the field of medical education and research as scholars in medicine from all parts of the world gather together.

	46	New York University College of Medicine, New York City	Pri	1841	1,117	1,117	9- 9-57	3	136	129	130	127	522	1	127	Donal Sheehan, M.D., Dean	46
	47	State University of New York College of *Medicine*, New York City	Pub	1858	715	715	9-16-57	3	155	141	146	145	587	2	145	Robert A. Moore, M.D., Dean	47
	48	State University of New York College of Medicine, Syracuse	Pub	1872	700	700	9- 6-57	3	79	74	72	63	288	2	63	Carlyle Jacobsen, Ph.D., *President*	48
	49	University of Rochester School of Medicine and Dentistry	Pri	1925	900	900	9- 9-57	3	71	69	74	65	279	1	65	Donald G. *Anderson*, M.D., Dean	49
N.C.	50	Duke University School of Medicine, Durham	Pri	1930	1,020	1,020	9-30-57	3	78	78	82	81	319	2	80	Wilburt C. Davison, M.D., Dean	50
	51	Bowman Gray School of *Medicine* of Wake Forest College, Winston-Salem	Pri	1922	825	825	10- 7-57	3	54	51	49	55	209	1	55	Coy C. Carpenter, M.D., Dean	51
	52	University of North Carolina School of Medicine, Chapel Hill	Pub	1890	671	1,271	9- -57	3	67	66	61	58	252	1	58	W. Reece Berryhill, M.D., Dean	52
Ohio	53	University of Cincinnati College of Medicine	Pub	1819	700	825	9-23-57	3	94	86	77	79	336	0	79	Stanley E. Dorst, M.D., Dean	53
	54	Western Reserve University School of *Medicine*, Cleveland	Pri	1843	1,000	1,000	9-18-57	3	91	80	80	73	324	4	73	Joseph T. Wearn, M.D., Dean	54
	55	Ohio State University College of Medicine, Columbus	Pub	1914	561	...	9- -57	3	150	144	138	135	567	0	133	Charles A. Doan, M.D., Dean	55
Okla.	56	University of Oklahoma School of Medicine, Oklahoma City	Pub	1900	450	800	9-16-57	3	101	97	86	89	373	0	88	Mark R. Everett, Ph.D., Dean	56
Ore.	57	University of Oregon Medical School, Portland	Pub	1887	546	804	9-30-57	3	76	73	78	66	293	0	65	D. W. E. Baird, M.D., Dean	57
Pa.	58	Hahnemann Medical College and Hospital of Philadelphia	Pri	1848	922	922	9- 9-57	Degree	108	97	96	97	398	0	97	Charles Cameron, M.D., Dean	58
	59	Jefferson Medical College of Philadelphia	Pri	1825	882.52	882.52	9-10-57	3	180	175	162	165	682	0	165	George Allen Bennett, M.D., Dean	59
	60	Temple University *School of Medicine*, Philadelphia	Pri	1901	850	850	9- 9-57	3	137	120	119	115	491	0	114	William N. Parkinson, M.D., Dean	60
	61	University of Pennsylvania School of Medicine, Philadelphia	Pri	1765	1,000	1,000	9- 3-57	3	126	122	128	127	503	0	126	John McK. Mitchell, M.D., Dean	61
	62	Woman's Medical College of Pennsylvania, Philadelphia	Pri	1850	975	975	9- 9-57	3	50	46	45	41	182	0	40	Marion Fay, Ph.D., Dean	62
	63	University of Pittsburgh School of Medicine	Pri	1886	1,048	1,048	9- 9-57	3	100	87	82	93	362	0	91	William S. McEllroy, M.D., Dean	63
S.C.	64	Medical College of South Carolina, Charleston	Pub	1823	435	...	9-12-57	3	80	75	77	73	305	0	74	John T. Cuttino, M.D., Dean	64
Tenn.	65	University of Tennessee *College of Medicine*, Memphis	Pub	1876	450	675	Quarterly	3	225	194	182	186	787	11	185	O. W. Hyman, Ph.D., Dean	65
	66	Meharry *Medical College*, Nashville	Pri	1876	794	794	9-16-57	3	74	64	65	55	258	15	53	Daniel T. Rolfe, M.D., Dean	66
	67	Vanderbilt University School of Medicine, Nashville	Pri	1874	1,010	1,010	9-23-57	Degree	54	48	47	53	202	2	53	John B. Youmans, M.D., Dean	67
Texas	68	University of Texas Southwestern Medical School, Dallas	Pub	1943	110	...	9- 4-57	3	106	94	95	95	390	9	91	Atticus J. Gill, M.D., Dean	68
	69	University of Texas Medical Branch, Galveston	Pub	1890	106	...	9-16-57	3	164	148	159	130	601	0	129	John B. Truslow, M.D., Executive Director	69
	70	*Baylor University* College of Medicine, Houston	Pri	1900	897.50	897.50	9-10-57	3	82	82	81	91	336	12	90	Stanley W. Olson, M.D., Dean	70
Utah	71	University of Utah School of Medicine, Salt Lake City	Pub	1905	480	830	9- -57	3	54	54	47	57	212	0	57	Philip B. Price, M.D., Dean	71
Vt.	72	University of Vermont College of Medicine, Burlington	Pub	1822	555	1,005	9-16-57	3	50	48	41	40	179	0	40	George A. Wolf, M.D., Dean	72
Va.	73	University of Virginia School of Medicine, *Charlottesville*	Pub	1827	514	964	9-20-57	3	76	74	72	75	297	0	75	Thomas Harrison Hunter, M.D., Dean	73
	74	Medical College of Virginia, *Richmond*	Pub	1838	586	911	9- -57	3	84	83	101	96	364	0	95	William F. Maloney, M.D., Dean	74
Wash.	75	University of Washington School of Medicine, Seattle	Pub	1915	408	678	10- 2-57	3	76	69	73	72	290	0	72	George N. Aagaard, M.D., Dean	75
Wis.	76	University of Wisconsin Medical School, Madison	Pub	1907	340	660	9-23-57	3	83	81	76	78	318	15	77	John Z. Bowers, M.D., Dean	76
	77	Marquette University School of Medicine, Milwaukee	Pri	1912	900	900	9- 9-57	3	103	96	99	99	397	7	100	John S. Hirschboeck, M.D., Dean	77
Puerto Rico	78	University of *Puerto Rico School* of Medicine, San Juan	Pub	1949	558	558	8-18-57	3	52	46	45	41	184	0	41	E. Harold Hinman, M.D., Dean	78
		Totals							7,654	7,078	7,023	6,834	28,589	154	6,796		

Approved Schools of Basic Medical Sciences

N.H.	1	Dartmouth Medical School, Hanover	Pri	1797	1,117.50	1,117.50	9- -57	3	24	24	...	...	48	0	...	Rolf C. Syvertsen, M.D., Dean	1
N.D.	2	University of North Dakota School of *Medicine, Grand Forks*	Pub	1905	178	416	9- 4-57	3	41	39	...	...	80	2	...	*Theodore* H. Harwood, M.D., Dean	2
S.D.	3	University of South Dakota School of Medical Sciences, Vermillion	Pub	1907	320	550	9- 3-57	3	41	36	...	...	77	4	...	W. L. Hard, Ph.D., Dean	3
W.Va.	4	West Virginia University School of Medicine, Morgantown	Pub	1912	264	700	9-13-57	3	31	27	...	...	58	0	...	Edward J. Van Liere, Ph.D., Dean	4
		Totals							137	126	...	...	263	6	...		

Schools Developing New Programs

Fla.	1	University of Florida College of Medicine, Gainesville	Pub	1956	600	1,200	9- 57	4	47	...	...	...	47	0	...	George T. Harrell, M.D., Dean	1
N.J.	2	Seton Hall College of Medicine and Dentistry, Jersey City	Pri	1956	950	950	9-11-57	3	80	...	...	...	80	0	...	Charles L. Brown, M.D., Dean	2
N.Y.	3	Albert Einstein College of Medicine, New York City	Pri	1955	1,050	1,050	9-16-57	Degree	96	55	...	...	151	0	...	Marcus D. Kogel, M.D., Dean	3
		Totals							223	55	...	...	278	0	...		
		Grand totals (Four-year schools and schools of basic medical sciences)							8,014	7,259	7,023	6,834	29,130	160	6,796		

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* Schools developing new programs not yet eligible for full approval included at the end of the table.
† Pub = Public; Pri = Private.

has produced data that are not sufficiently comparable with information published in previous years to allow reducing this information to a quantitative, tabular form. The lack of a uniform system of accounting results in instances of inclusion of items in the report of one institution which in another school may appear in a different category or even be omitted entirely. The quantitative data that usually is given in this section of the annual report on medical education will no longer be presented until there is more assurance as to its completeness and validity.

Giving due regard to these qualifications, information available strongly suggests that there has been a substantial increase in funds available for the support of medical school activities and these funds from all sources amount to considerably more than 200 million dollars. It is evident that the change in form and content of this year's inquiry brought forth information of income that was not presented in previous years, even though an unknown amount of it was probably available in those prior years. It also seems very likely that the amount of support from customary government and many nongovernment sources is now greater than it has been in the past. This increase cannot be accounted for solely by funds anticipated for the newly developing schools.

TABLE 4.—*Approved Medical*

Province		Approved Medical Schools	Year Organized	Tuition		1957-1958 Academic Year	Pre-Medical Requirements by Yr.
				Resident	Non-Resident		
Alta.	1	University of Alberta Faculty of Medicine, Edmonton	1913	$351.25	$351.25	9- 3-57	2
B.C.	2	University of British Columbia School of Medicine, Vancouver	1949	445	445	9- 1-57	3
Man.	3	University of Manitoba Faculty of Medicine, Winnipeg	1883	486	486	9- 9-57	3
N.S.	4	Dalhousie University Faculty of Medicine, Halifax	1867	531	731	9- -57	3
Ont.	5	Queen's University Faculty of Medicine, Kingston	1854	545	545	9-10-57	3
	6	University of Ottawa Faculty of Medicine, Ottawa	1945	524.50	524.50	9- 4-57	3
	7	University of Western Ontario Faculty of Medicine, London	1881	585	585	9-10-57	3
	8	University of Toronto Faculty of Medicine, Toronto	1843	591.50	591.50	9-25-57	2
Que.	9	McGill University Faculty of Medicine, Montreal	1823	650	650	9- 4-57	3
	10	University of Montreal Faculty of Medicine, Montreal	1843	418	498	9-10-57	Degree
	11	Laval University Faculty of Medicine, Quebec	1848	520	520	9- 4-57	Degree
Sask.	12	University of Saskatchewan College of Medicine, Saskatoon	1926	470.50	470.50	9-25-57	2
		Totals					

* Intern and premedical figures not included.
† 67 Intern year & 49 fourth year graduates.

In another section of this report (The Search for Costs of Medical Education), reference is made to the potential values of the development of a uniform cost accounting system in medical schools. Without such a system, it seems unlikely that it will be possible to ascertain reasonably the total expenditures of medical schools or to present a feasible estimate of the costs of separate functions of these institutions.

SEARCHING FOR THE COST OF MEDICAL EDUCATION

The costs of supporting the activities of medical schools have risen steadily concomitant with an expansion of those activities and the general increase in the price of services and goods characteristic of the times. All funds available for the various functions of our schools place the total operation above the level of a 200-million-dollar-a-year business. Since so much of these funds is derived either directly or indirectly from public sources, there exists an obligation to render as meaningful an accounting of expenditures as is possible.

Other large business enterprises have found it of value to utilize a functional system of cost accounting. The buyer, seller, manufacturer, and stockholder in the automobile industry all benefit from knowledge of the costs of the component parts of the automobile as well as the budgets of the various departments which made the components. There should be similar values to all concerned in knowledge of the costs of the various functions of medical school as well as the budgets of the partments within the school.

Emory University and the State University of New York have recently undertaken a cost analysis of the functions of their medical centers. Both studies are designed to identify the costs of such activities as undergraduate, graduate, and postgraduate medical instruction; nonmedical instruction; research; patient services; and other community services. The Emory study is limited to expenditures recorded in Emory University accounts. The State University of New York project involves a comparative analysis of costs in 9 private and 10 state university medical colleges.

In the report of its pilot study, the Emory group anticipates that the data derived will be of value in the following areas:

1. In informing the university and its benefactors why the medical center program is costly, what is being accomplished with funds, and in what other areas further support is needed.
2. In examining expenditures in terms of program objectives and in determining whether funds are being expended in accordance with the relative importance of these objectives.

3. In suggesting areas for careful study directed toward effecting savings or strengthening certain programs.
4. In developing a realistic base for the consideration of financial relationships between the school of medicine, its associated hospitals, other schools or departments of the university, as well as outside agencies with which the school cooperates.
5. In determining overhead chargeable to contract research and other services provided to outside agencies.
6. To assist in the preparation of budgets particularly when a change in programs is contemplated.
7. If and when an acceptable, uniform cost analysis method is devised, comparisons of cost among several medical schools, properly performed and interpreted, can point to management differences that would merit study. In such comparisons, careful consideration would have to be given to differences in important factors that effect cost, e. g., nature of programs, student enrollment, salary scales, location and types of physical facilities, and the relationship of the school to its university, affiliated hospitals, etc.

The beginning already made suggests that the complexity of a medical center can lend itself to this useful fiscal approach. The reports of these studies will be of great interest and potential value to all medical educators and university business officers. It seems likely that the usefulness of this tool will attract the cooperative response of other medical schools. Perhaps in the near future it may even be possible to suggest a reasonably fair sum as representative of what it costs to educate a medical student.

Schools in Canada

Students by Classes 1956-1957								Part time and Irregular Students	Graduates 7-1-56 to 6-30-57		
1st Premedical Yr.	2nd Premedical Yr.	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	Required Intern Yr.	Total				
...	...	60	57	46	49	...	212	0	42	John W. Scott, M.D., Dean	1
...	...	60	51	48	50	...	209	0	48	John W. Patterson, M.D., Dean	2
...	...	68	62	51	49	67	230*	0	116†	Lennox G. Bell, M.D., Dean	3
...	...	61	53	54	55	49	223*	0	49	C. B. Stewart, M.D., Dean	4
56	54	58	55	50	56	...	219*	0	56	G. Harold Ettinger, M.D., Dean	5
27	34	68	62	42	50	...	222*	1	50	Jean-Jacques Lussier, M.D., Dean	6
...	...	60	51	57	58	...	226	0	54	J. B. Collip, M.D., Dean	7
134	121	149	152	124	140	...	565	0	139	J. A. MacFarlane, M.D., Dean	8
...	...	116	102	110	97	...	425	0	97	Lloyd G. Stevenson, M.D., Dean	9
...	...	124	108	103	110	...	445	0	100	Wilbrod Bonin, M.D., Dean	10
...	...	141	114	131	122	113	538*	0	113	Jean-Baptiste Jobin, M.D., Dean	11
...	...	36	37	39	29	...	141	0	29	J. Wendell Macleod, M.D., Dean	12
217	269	1,001	934	855	865	229	3,655	1	893		

SCHOLARSHIP AND LOAN FUNDS

Medical schools were asked to stipulate the total capital value of funds administered by the medical school for scholarships. All but 3 of the 85 returns were usable. Capital holdings for scholarships total more than 11 million dollars. The 5 schools with greatest holdings account for 36% of this sum, and the 10 schools with greatest holdings account for 55%. It is to be emphasized that these data deal with capital rather than available funds. It is of interest to point out that the three unusable returns were all from privately owned institutions. Pertinent data are given in table 5. The schools in this table are ranked alphabetically rather than by amount of holdings.

Schools were also asked for the total capital value of funds administered by the school for student loans. Usable returns were received from all but six schools, all of which are privately owned. Data similar to those presented for scholarship funds are given in table 6. Again it is to be noted that these are capital rather than available funds and that the schools are listed alphabetically.

It is interesting to note that Harvard, Michigan, and University of California, Los Angeles, are among the top 10 schools in capital holdings for both scholarships and loans. Twelve schools reported no capital funds for scholarships and two schools reported none for loans.

An inquiry conducted in October, 1956, indicated that approximately one-third of available sums for scholarships was derived from endowed funds, one-third from tax sources (usually state government), and one-third from all other sources (alumni, state and county medical societies, etc.). This suggests that funds available for expenditure for scholarships are greater than would be the usual return on an 11-million-dollar investment. The data from this inquiry are dealt with in an interesting article in the June, 1957, issue of the Student American Medical Association publication, *The New Physician*,[10] entitled "The Misplaced Monies of Medical Education."

NATIONAL SCIENCE FOUNDATION RESEARCH REVIEW

The National Science Foundation has completed a group of surveys on the dollar volume and manpower resources in research for the year 1953-1954.

The foundation has been publishing monthly reviews of their data and two of these [10] contain information of particular interest and pertinence to medicine.

It is noted that, although colleges and universities are not major contributors to total research from a dollar standpoint, because a large portion of their research is basic, such institutions do wield a very significant influence upon total research. The survey covered universities granting advanced degrees in science and included those having professional schools (independent medical schools were also included). There were 190 such institutions and usable responses were obtained from 173.

TABLE 5.—*Capital Funds for Scholarships*

Total — $11,200,000

	% Held	
Columbia University	36	55
Harvard Medical School		
University of Rochester		
University of Virginia		
Washington University		
University of Michigan		
University of California, Los Angeles		
University of California, San Francisco		
University of Washington		
Woman's Medical College		
Publicly owned schools		35
Privately owned schools		65

During the year reported, these institutions expended 278 million dollars in the physical (mathematics, engineering, physics, and chemistry); life (biological and medical preclinical and clinical); psychological and social sciences. It is estimated that the 17 nonresponding universities and the 930 liberal arts and teachers colleges would have raised this total to approximately 285 million dollars.

Separately budgeted research in universities sponsored by the federal government, industry, private foundations, or the institutions themselves accounted for approximately three-fourths of the total. In this category, 70% of the total support was from the federal government. Sixty per cent of the separately budgeted research was in the physical sciences, 30% in the life sciences, and 10% in others.

The survey indicates that research in medical schools accounts for approximately two-thirds of the total dollars expended by colleges and universities for research in the life sciences. From estimates available, it appears that medical schools as a group spent at least one dollar on research for each dollar of instructional expense.

As was true in the over-all university survey, separately budgeted research in medical schools accounts for most (68%) of the total. The federal government provided approximately half of the support for this category of research in medical schools as opposed to 70% in the universities proper.

The National Science Foundation estimated the indirect costs associated with research in both the university and the medical school surveys. The formula used was based on Section XV, Contract Cost Principles, Armed Services Procurement Regulations and was the one generally used by the Department of Defense and certain other federal agencies. It establishes the rate for computing indirect costs based on the total salary and wage expenditures of the project. In this study the median rate was found to be 40% of the total salary and wage expenditures that are made as a direct project charge.

In the university study, the sponsoring agency provided 58% of the indirect costs for separately budgeted research and the university provided 42%. In the medical school study, the sponsoring agency provided only 27% of indirect costs and the medical schools 73%. For the survey year, this medical school contribution was estimated to be slightly more than 9 million dollars.

These reviews of the National Science Foundation identify sources of funds and costs of research in an interesting and illuminating manner. They and the forthcoming monograph that will present a more detailed report are recommended to all concerned in this important aspect of medicine. Since the data are for the year 1953-1954, the funds involved are now significantly greater, but the pattern of distribution presented should continue to be of essentially the same degree of validity.

AMERICAN MEDICAL EDUCATION FOUNDATION

In order to acquaint readers with the current status and activities of the American Medical Education Foundation the following report has been prepared by its Executive Director.

During the seven years of its existence, the American Medical Education Foundation has received more than 6 million dollars from the medical profession, both individually and through its medical societies, for distribution in unrestricted gifts to the nation's medical schools. Its continued progress and successful development have assured for it a unique position in education as the first concrete concern of an entire profession for the financial welfare of its schools.

TABLE 6.—*Capital Funds for Loans*

Total — $6,200,000

	% Held	
College of Medical Evangelists	37	52
Harvard Medical School		
University of Minnesota		
University of Pennsylvania		
Western Reserve University		
Cornell University		
University of Michigan		
Stanford University		
University of Kansas		
University of California, Los Angeles		
Publicly owned schools		47
Privately owned schools		53

During the calendar year of 1956, 39,892 contributors gave the foundation $1,072,727, an increase of 40% over the income of 1955. This amount formed the funds for the grants which the foundation distributed to the medical schools on Feb. 11, 1957, increasing the total to $5,756,678 that the medical schools have now received from the foundation.

This substantial amount of money does not fully represent the real value that the American Medical Education Foundation has been to the medical schools during its existence. Since 1951 it has conducted a public relations campaign, using advertising and publicity to supplement local committees, that has focused attention upon the serious problems connected with the financial support of the nation's medical schools. In addition, during its first five years, it transferred its donations to the National Fund for Medical Education for distribution. These donations, representing almost half of the amount given in grants by the National Fund, were of great assistance to that organization in developing its appeal to industry and other segments of society.

The American Medical Education Foundation has also had a stimulating effect on the development of alumni programs by individual schools. Since 1952 the foundation has collected and tabulated reports from the schools on the contributions made to them by physician alumni. This information has been helpful not only in evaluating the effectiveness of each school's program but also by helping to coordinate the campaigns of the alumni programs with the efforts of local medical society committees working on behalf of the foundation. For the past three years the American Medical Education Foundation has included in its appeals the statement "Give to the American Medical Education Foundation or give to your medical school but give." It has also held several meetings with school representatives in an effort to stimulate further the coordination and effectiveness of such alumni programs with the American Medical Education Foundation's national campaign. Recently it has moved to organize a committee made up of representatives from the medical school deans, the schools' development officers, and the state volunteer chairmen for the foundation to study the problems and explore the possibilities of such coordination.

The activities described above coupled with the desire to publicize more effectively its efforts prompted the decision of the foundation to discontinue its previous methods of distributing its income through the National Fund. It therefore made its first direct grants to the medical schools on Feb. 11, 1957, being careful, however, to coordinate the dates and publicity with the National Fund so that the two organizations' continued cooperation would be emphasized. The board of directors of the foundation worked out a simple grants program based on an equal division of the $551,425 of undesignated money available. The four-year schools received a basic grant of $6,850; the schools with only first-year and second-year classes enrolled received grants of $3,425. In addition to this, $520,940 designated by contributors for specific schools was properly distributed as added grants to those schools.

The announcement of this new grants program received some criticism because of an arrangement that had been made by the National Fund with the Ford Foundation, whereby that foundation would match a portion of the undesignated income of the fund according to a percentage formula. This, of course, would have applied to the American Medical Education Foundation's undesignated donations if the previous distribution method through the National Fund had continued. For this reason the Board of Directors of the American Medical Education Foundation appealed to its sponsoring organization, the American Medical Association, to make up the estimated amount which the schools would lose as a result of American Medical Education Foundation's income not participating in this matching arrangement. The Board of Trustees of the American Medical Association granted this request by making an additional gift of $125,000 to the American Medical Education Foundation.

It was in this very area of criticism, however, that the wisdom of the board of directors in making its decision to distribute grants separately has become increasingly apparent. The emphasis on undesignated funds in the Ford matching formula had a disruptive effect on the development of the alumni programs so recently started in many schools. The subsequently better relations which have been previously described were some of the direct results of this decision.

During the early part of 1957, the expanding volume of interest in the American Medical Education Foundation and the greater understanding of the financial problems of its schools by the medical community assures the continuation of this organization and its value to medical education.

THE NATIONAL FUND FOR MEDICAL EDUCATION

The National Fund for Medical Education in January awarded grants totaling $3,066,450 to the medical schools. This was the largest annual award in the fund's history and brought to $12,066,591 the total awarded since 1951 when the first awards were made.

Each four-year school received $15,000 plus $65 per student. Four two-year schools received $7,500 plus $65 per student and the two schools in the process of becoming four-year schools received $11,250 plus $65 per student.

The number of corporations contributing to the fund in 1956 totaled 1,737, a new high. They gave $1,862,115 compared to $1,682,508 given by 1,525 firms in 1955. The Ford Foundation contributed $1,393,907 under its "matching" arrangement with the fund.

(Under the Ford Foundation's arrangement with the fund, all unrestricted fund receipts in 1956, up to the previous year's total, were matched 70%, and everything over that was matched 100%. This year the receipts up to last year's total will be matched 60%, and the balance 100%. Each year, the matching percentage for receipts up to the previous year's total will diminish, under an agreed formula, but the percentage for everything over the previous year's total will remain at 100.)

In November, 1956, the fund joined with the Association of American Medical Colleges and the American Medical Association in presenting the fourth Frank H. Lahey Memorial award to Colby M. Chester, honorary chairman, General Foods Corporation, and chairman of the fund's Committee of American Industry. The award is given annually to a layman for "distinguished services to medical education." Previous recipients were President Eisenhower, former President Hoover, and Abraham Flexner. The 1957 award was presented to Alfred P. Sloan Jr., at a dinner in New York City at which President Eisenhower was the principal speaker.

TABLE 7.—*Budgeted Unfilled Full-Time Faculty Positions in Medical Schools of the United States, 1956-1957*

	No. of New Positions					No. of Old Positions					
Department	Instructor	Assistant Professor	Associate Professor	Professor	Total	Instructor	Assistant Professor	Associate Professor	Professor	Total	Total Old and New Positions
Basic Medical Sciences											
Anatomy	4	4	1	—	9	3	—	5	5	13	22
Biochemistry	4	—	—	—	4	4	3	3	3	13	17
Physiology	2	2	1	1	6	6	3	3	3	15	21
Pharmacology	—	2	3	1	6	4	5	2	—	11	17
Microbiology	3	4	1	1	9	3	4	2	—	9	18
Pathology	2	6	8	2	18	5	13	7	3	28	46
Comparative biology	—	2	—	1	3	—	—	—	—	—	3
Subtotals	15	20	14	6	55	25	28	22	14	89	144
Clinical Fields											
Medicine	9	7	4	—	20	6	3	—	—	9	29
Surgery	9	8	6	1	24	6	4	2	6	18	42
Obstetrics and gynecology	1	1	1	2	5	2	5	—	1	8	13
Pediatrics	1	5	2	2	10	—	5	5	1	11	21
Psychiatry	2	5	1	4	12	2	6	6	3	17	29
Preventive Medicine	—	3	2	2	7	2	2	3	5	12	19
Anesthesiology	2	—	—	—	3	—	1	—	2	3	6
Dermatology	1	—	—	—	1	1	—	—	—	1	2
Neurology	2	—	—	—	2	—	2	1	—	3	5
Orthopedics	—	—	—	—	—	1	—	1	1	3	3
Otolaryngology	—	—	—	1	1	—	—	—	—	—	1
Physical Medicine	1	—	—	—	1	3	—	—	—	3	4
Subtotals	29	32	18	14	93	24	32	19	19	94	187
Totals	44	52	32	20	148	49	60	41	33	183	331

In its public relations and fund-raising activities, the fund is seeking to build a bridge of understanding between industry and medical education. In cooperation with the International Harvester Foundation and the United States Steel Foundation, Inc., the fund held an all-day meeting on "Tomorrow's Challenges to the Medical Sciences," at the University of Chicago, March 5. James B. Conant, former president of Harvard University and more recently ambassador to West Germany, chaired the meeting, which drew an audience of 97, representing America's leading corporations.

There were three panels, one each on The Implications of Nuclear Physics for the Medical Sciences, The Impact of the Behavioral Sciences on Medical Education, and Medical Education Looks to the Future. A report on this conference will be available this fall.

In April, the fund published a 6,000-word brochure, "For Lasting Security," showing the close link between medical education and the nation's health and security. It discusses (1) the rise of American medical schools to front rank in world medicine, (2) the role of the schools in advancing the medical sciences, (3) the mounting problems of medical education, (4) industry's stake in medical education, (5) the current "struggle for solvency," and (6) the future of the nation's health.

Steady progress is being made, the fund reports, in alerting the American public—particularly corporations—to the problems of medical education. There is still, however, a wide lack of understanding of medical school policies and activities, particularly with respect to (1) admissions policies, (2) the so-called doctor shortage, (3) the wide range of medical school activities and responsibilities, and (4) medical school finances.

At a board meeting of the fund in April, the hope was expressed that the joint efforts of the American Medical Association, the Association of American Medical Colleges, and the Fund, which made possible a successful Medical Education Week, will result in the clearing up of public misunderstanding on all these medical problems.

FULL-TIME FACULTY POSITIONS UNFILLED, 1956-1957

There has been increasing concern during recent years over the difficulties which some schools have encountered in filling all of the old and newly budgeted full-time faculty positions. Consequently, the annual questionnaire on Medical School Statistics (1956-1957) included an inquiry regarding the number of budgeted new and old full-time faculty positions for which the medical school had been unable to obtain personnel during the year. Table 7 presents a summary of the results of this inquiry. The material is arranged so as to indicate departments, rank, and whether the vacancies were in newly created or old positions for which funds had been budgeted.

The total of 331 unfilled positions represents a considerable increase over the report of 258 in 1954 and 251 in 1955. Unfilled posts in the basic medical sciences increased from 108 in 1955 to 144 in 1956, with the greatest need being reported in pathology. The clinical areas reported an increase of unfilled full-time positions from 143 in 1955 to 187 in 1956, with the largest group represented by surgery. It is of interest to note that no unfilled full-time positions were reported for ophthalmology in 1956-1957. About half of the unfilled positions represented newly created posts. Of the over-all total of 331 unfilled full-time positions, 93 represented instructorships, 112 assistant professorships, 73 associate professorships, and 53 were professorships.

Thus, there continues to be a substantial number of budgeted new and old full-time faculty positions for which schools have not been able to make satisfactory appointments during the year. This represents an increase of approximately 30% over the unfilled faculty full-time positions reported two years ago. This increase is somewhat difficult to analyze, for many factors are involved. New schools are in the course of development and have opened a number of new full-time positions. Older established schools in some instances are in transition from almost completely voluntary and part-time clinical faculty to nuclei of full-time clinical faculty personnel and, in other instances, have created new departments and chairs to man them. The two departments reporting the largest number of unfilled full-time positions (pathology and surgery) are both in areas where economic competition in the form of laboratory activities or private practice may play a role of considerable significance. Regardless of the factors involved, the problem of obtaining and maintaining adequate full-time faculty personnel for those disciplines where such personnel are essential to the teaching and research activities of modern medical schools represents a constant and increasingly difficult challenge.

TABLE 8.—*Total Scheduled Hours Allocated to Major Clinical Departments for Combined Third and Fourth Years*

Schools	Medicine	Surgery	Pediatrics	Obst.-Gynec.	Psychiatry
Maximum 5	1,505(1,619-1,351)	1,105(1,135-1,072)	720(824-576)	695(792-653)	435(560-364)
Median 5	945(957-930)	770(779-713)	430(440-410)	465(486-424)	210(234-198)
Minimal 5	535(604-392)	310(367-195)	235(268-193)	260(301-156)	55(66-40)

TABLE 9.—*Third-year Curriculum by Total Scheduled Hours Allocated to Major Clinical Departments*

Schools	Medicine	Surgery	Pediatrics	Obst.-Gynec.	Psychiatry
Maximum 5	805(964-692)	625(762-566)	445(608-380)	420(645-306)	280(303-264)
Median 5	490(500-470)	405(409-397)	215(229-204)	165(177-158)	155(162-145)
Minimal 5	225(265-120)	110(141-30)	30(55-0)	8(22-0)	25(33-16)

TABLE 10.—*Fourth-year Curriculum by Total Scheduled Hours Allocated to Major Clinical Departments*

Schools	Medicine	Surgery	Pediatrics	Obst.-Gynec.	Psychiatry
Maximum 5	895(1,154-760)	725(1,080-621)	440(580-330)	540(579-469)	240(349-238)
Median 5	440(450-429)	335(350-319)	215(231-195)	275(289-265)	75(82-72)
Minimal 5	205(272-156)	135(176-59)	15(65-0)	35(118-0)	5(11-0)

GROSS CHARACTERISTICS OF THE CLINICAL CURRICULUM

In last year's report, certain national characteristics of the curriculum in the basic medical sciences were presented as an aid to the many medical schools undertaking curriculum study and revision. The medical school questionnaire, which largely serves as the basis for the current report, included questions relevant to the allocation of scheduled hours during the last two years of the curriculum.

Data pertinent to the five major clinical disciplines are presented in tabular form. For each column of the tables in this section of the report the average hour allocations (reduced to the nearest multiple of five) and the ranges from which the averages were obtained are presented for the five schools with the maximum assignment of hours, for the five schools with the minimum assignment of hours, and for the five schools with hour assignments that placed them in a median position. All data presented were derived from the reports of 51 medical schools whose returns were considered usable. Returns were rejected when they were not adequately specific for all of the curriculum components studied. It is believed that the returns used represent a reasonable sampling of the total schools queried.

This material should readily lend itself to a comparative study of curriculum structure. Such study should be undertaken with the understanding that the data presented here purport to represent scheduled hour allocations as reported by the schools for a typical, individual student. Utilization of free, elective, or unscheduled hours during evenings and week-ends is not intended to be included.

The total hours scheduled for each of the major clinical departments during both of the last two medical school years are presented in table 8. The wide swings between the hour assignments for the averages of the maximum and minimum groups attest in part to the great variation of content and method that characterizes medical education in the United States. At the same time it is interesting to note that the relative percentage of total scheduled hours assigned to each discipline remains reasonably constant between the maximum, median, and minimal group averages. In the last two medical school years, from 32 to 35% of scheduled time is allocated to medicine, 21 to 27% to surgery, 15 to 16% to pediatrics, 10 to 18% to obstetrics and gynecology, and 4 to, 10% to psychiatry.

CLINICAL CURRICULUM BY TOTAL SCHEDULED HOURS ASSIGNED TO MAJOR DEPARTMENTS

Tables 9 and 10 present hour assignment by major clinical subjects separately for the third and fourth years. In medicine, surgery, and pediatrics most often there appears to be approximately equal

TABLE 21.—*Teaching Responsibilities for Other Than Undergraduate Medical Students, 1956-1957*

UNITED STATES SCHOOLS	Undergraduate or Basic Professional, No. Enrolled							Professional, No. Enrolled (Not Candidates for Advanced Degrees)				
	Dental Students	Pharmacy Students	Nurses	Technical Students	Arts and Science Majors	Other	Candidates for Advanced Degrees, No. Enrolled	Interns	Residents	Fellows (not otherwise designated)	Postgraduate Continuation Enrollments	Other
Medical College of Alabama	190	0	90	36	0	56	31	33	87	25	0	
University of Arkansas	0	0	22	40	0	0	15	24	52	0	0	
College of Medical Evangelists	104	0	60	17	0	0	16	..	..	..	..	
University of Southern California	0	0	0	0	0	0	80	150	150	15	0	
Stanford University	0	0	100	23	71	40	40	118	103	46	26	
University of California, Los Angeles	0	0	0	0	0	0	41	46	47	113	1,802	
University of California, San Francisco	275	240	179	46	0	0	79	41	190	14	1,637	
University of Colorado	0	0	190	13	28	16	32	48	199	0	3,575	
Yale University	0	0	326	9	0	58	83	43	119	73	150	
Georgetown University	382	0	191	0	0	0	99	9	115	18	0	
George Washington University	0	5	0	0	105	0	6	24	52	9	0	
Howard University	152	77	28	25	10	3	10	18	42	7	0	
University of Florida	0	0	47	0	0	0	4	0	0	0	0	
University of Miami	0	0	0	0	0	0	16	55	105	19	0	
Emory University	299	0	78	12	0	9	20	68	183	23	1	
Medical College of Georgia	0	0	0	0	0	0	2	3	78	4	1	
Chicago Medical School	0	0	0	0	0	0	..	0	0	0	0	
Northwestern University	0	0	250	39	0	6	41	0	131	7	107	
Stritch School of Medicine	10	0	0	0	0	0	44	12	21	2	0	
University of Chicago	0	0	0	0	0	0	116	42	130	46	35	
University of Illinois	225	84	24	0	0	21	70	32	121	20	106	
Indiana University	140	..	802	93	561	..	4	27	116	17	..	
State University of Iowa	55	36	113	57	49	76	66	20	169	2	0	
University of Kansas	0	40	142	74	267	261	39	19	105	14	2,588	
University of Louisville	217	0	86	10	1	6	21	22	84	12	276	
Louisiana State University	0	0	45	0	0	11	11	56	145	11	75	
Tulane University	0	0	0	11	44	32	50	125	166	32	115	
Johns Hopkins University	0	0	0	0	0	9	5	0	0	0	0	
University of Maryland	1,104	58	181	4	0	8	20	40	93	24	8	
Boston University	0	0	140	39	56	0	36	0	12	0	0	
Harvard Medical School	76	0	0	0	0	0	84	0	0	0	401	
Tufts University School of Medicine	200	0	0	0	0	0	19	36	48	20	0	
University of Michigan	345	162	479	20	1,143	0	33	55	295	0	959	
Wayne State University College of Medicine	0	0	0	14	0	0	26	0	0	0	177	
University of Minnesota	271	41	83	595	308	362	130	38	150	0	1,246	
University of Mississippi	0	0	42	0	0	0	3	24	33	0	0	
University of Missouri	0	0	253	2	518	693	20	0	20	0	2	
St. Louis University	155	0	161	92	0	0	21	20	53	4	0	
Washington University	0	0	0	83	0	0	29	48	187	65	9	
Creighton University	93	0	0	0	1	0	5	0	0	0	0	
University of Nebraska	0	0	105	25	0	0	9	5	30	2	0	
Dartmouth Medical School	0	0	157	26	0	0	..	14	63	0	0	
Seton Hall College of Medicine	38	0	0	0	0	0	0	0	0	0	0	
Albany Medical College	2	0	82	36	0	23	8	43	88	..	700	
University of Buffalo	123	60	38	22	23	0	20	0	0	0	0	
Columbia University	148	0	362	0	0	823	35	0	0	65	600	
Cornell University	0	0	227	37	0	0	17	42	141	40	51	
Albert Einstein College of Medicine	0	0	0	0	0	0	2	44	157	26	0	
New York Medical College	0	0	185	0	0	0	..	109	20	0	29	
New York University	0	0	520	0	0	8	28	55	165	45	1,278	
State University of New York, New York City	0	0	0	0	0	0	9	196	330	30	31	38*
State University of New York, Syracuse	0	0	85	0	0	0	4	27	97	4	595	
University of Rochester	0	0	241	23	119	19	91	55	107	25	0	
University of North Carolina	193	117	118	11	20	6	37	27	85	8	6	
Duke University	0	0	304	33	0	44	2	51	156	18	0	
Bowman Gray School of Medicine	0	0	170	27	0	0	22	11	68	1	0	
University of North Dakota	0	0	131	18	9	47	15	0	1	0	0	
University of Cincinnati	0	0	0	0	0	0	32	52	142	28	0	
Western Reserve University	180	0	173	26	0	0	57	..	..	..	101	
Ohio State University	240	14	170	182	108	790	72	48	161	30	0	
University of Oklahoma	0	0	98	18	0	7	40	21	79	11	1,455	
University of Oregon	0	0	366	20	0	0	51	27	76	4	532	
Hahnemann Medical College	0	0	0	6	0	0	9	9	67	10	0	
Jefferson Medical College	0	0	265	25	0	0	14	0	0	0	0	
Temple University	0	0	259	24	0	0	15	15	124	0	0	
University of Pennsylvania	131	0	30	0	105	0	105	0	0	0	0	

Table 21.—*Teaching Responsibilities for Other Than Undergraduate Medical Students, 1956-1957*—Continued

	Undergraduate or Basic Professional, No. Enrolled							Professional, No. Enrolled (Not Candidates for Advanced Degrees)				
	Dental Students	Pharmacy Students	Nurses	Technical Students	Arts and Science Majors	Other	Candidates for Advanced Degrees, No. Enrolled	Interns	Residents	Fellows (not otherwise designated)	Postgraduate Continuation Enrollments	Other
UNITED STATES SCHOOLS—Continued												
Woman's Medical College of Pennsylvania	0	0	83	5	0	0	..	6	17	9	0	
University of Pittsburgh	0	0	927	0	0	0	13	6	236	6	516	
Medical College of South Carolina	0	101	172	4	0	0	9	15	54	7	0	
University of South Dakota	0	0	19	13	105	0	12	0	0	0	0	
University of Tennessee	201	188	47	21	0	0	41	0	0	0	0	
Meharry Medical College	120	0	80	18	0	15	..	10	23	0	0	
Vanderbilt University	0	0	0	0	0	24	15	28	84	14	0	
University of Texas Southwestern Medical Sch.	0	0	0	0	0	0	13	63	191	0	0	
University of Texas	0	0	296	46	0	0	31	36	162	10	126	
Baylor University	0	0	63	0	0	0	31	46	173	20	0	
University of Utah	0	20	48	22	76	0	51	26	56	8	1	
University of Vermont	0	0	55	27	0	0	6	17	37	1	0	
University of Virginia	0	0	0	6	0	0	7	29	74	20	0	
Medical College of Virginia	253	192	97	97	0	14	14	31	101	3	0	
University of Washington	226	110	469	99	1,109	242	92	87	81	72	399	
West Virginia University	0	80	0	20	0	2	11	0	0	0	11	
University of Wisconsin	0	195	280	171	305	0	59	20	75	2	2	
Marquette University	329	0	0	191	0	0	16	40	139	0	0	
University of Puerto Rico	0	0	54	59	0	2	..	0	0	2	0	
Totals	5,457	1,829	10,851	2,667	5,144	3,733	2,552	2,537	7,267	1,163	19,726	38
* 36 Graduate Students Psychiatry, 2 Unclassified Graduate Students.												
CANADA SCHOOLS												
University of Alberta	99	80	250	10	34	77	..	0	0	0	0	
University of British Columbia	0	0	118	25	127	6	..	..	..	..	..	
University of Manitoba	0	0	400	40	0	0	..	50	7	9	0	
Dalhousie University	36	23	44	0	27	0	..	50	41	2	0	
Queen's University	0	0	21	0	6	31	..	0	0	0	0	
University of Ottawa	0	0	20	0	0	0	..	2	0	6	1	
University of Western Ontario	0	0	93	0	0	0	..	98	26	12	2	
University of Toronto	392	96	36	70	318	271	..	86	34	89	153	
McGill University	..	..	..	..	..	..	..	..	..	..	..	
University of Montreal	95	120	0	67	0	146	..	97	0	0	22	
Laval University	0	0	0	83	0	0	..	111	0	0	0	
University of Saskatchewan	0	26	232	9	6	38	.	30	19	3	0	
Totals	613	345	4,214	304	518	569	..	524	127	121	178	

Table 21 portrays by school and student classification the educational responsibilities reported by the medical schools in the United States and Canada for students other than undergraduate medical students. The additional teaching responsibilities of the medical schools continue to increase. For the United States, such other students or enrollments totaled 62,899 or more than twice the total number of 29,130 medical students in 1956-1957. For Canadian schools, the total number of other students was 7,513 last year, as compared with 3,655 medical students.

The totals given in the table probably represent less than minimum real figures for the teaching responsibilities in addition to medical students. For example, inspection of the columns for interns and residents in the teaching hospitals of the medical schools in the United States reveals that 16 medical school reports listed neither interns nor residents, and another 4 schools reported residents but no interns. It would be expected that the educational program for interns and residents in the major teaching hospitals, at least, of the medical schools would require some time from the clinical faculty members of the schools. If there were added to the tabular totals in table 21 the numbers of interns and residents reported by just the major teaching hospitals of the medical schools reporting none, there would be 1,138 interns and 3,455 residents in addition to the 2,437 interns and 7,205 residents depicted in the table.

There is a similar lack of complete information supplied by the medical school administrators regarding the physician enrollments in postgraduate courses. Although 45 school reports presented zero physician enrollments in postgraduate courses, 18 of those schools last year had reported scheduling for 1956-1957 a total of 102 postgraduate courses for physicians. It would seem reasonable that some physicians enrolled in those courses and that some of each school's faculty and facilities were utilized.

TABLE 22.—*Advanced Degree Programs and Enrollment in the Basic Medical Sciences*

	MASTERS							DOCTORATES							POST-DOCTORATES							
	Anatomy	Biochemistry	Biophysics	Microbiology	Pathology	Pharmacology	Physiology	Anatomy	Biochemistry	Biophysics	Microbiology	Pathology	Pharmacology	Physiology	Anatomy	Biochemistry	Biophysics	Microbiology	Pathology	Pharmacology	Physiology	Total Enrollments
Medical College of Alabama	2	8	..	2	√	1	2	√	5	..	..	..	1	2	8	√	..	..	√	..	..	81
University of Arkansas School of Medicine	..	7	..	1	..	√	1	..	2	..	√	..	2	2	..	..	..	..	..	..	..	15
College of Medical Evangelists	2	7	..	4	..	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	16
University of Southern California School of Medicine	3	9	..	3	1	√	5	√	45	..	1	√	4	7	√	√	..	√	√	2	√	80
Stanford University School of Medicine	..	5	..	8	..	..	..	..	4	..	9	..	2	1	..	10	..	1	..	..	..	40
University of California, Los Angeles	2	1	1	..	7	1	3	9	8	8	..	..	2	6	..	..	..	..	..	..	..	48
University of California, San Francisco	6	2	..	√	..	8	2	9	20	..	√	..	2	22	8	√	..	√	..	√	√	79
University of Colorado School of Medicine	..	..	..	..	2	..	2	8	2	1	7	..	4	8	..	..	..	..	..	..	..	34
Yale University School of Medicine	√†	1	..	4	..	√	√	2	13	..	9	..	3	2	..	..	..	..	..	..	..	34
Georgetown University School of Medicine	1	4	..	2	2	..	..	..	..	..	..	..	3	4	..	..	..	..	..	..	..	16
George Washington University School of Medicine	√	18	..	15	..	3	11	4	13	..	24	..	4	7	..	..	..	..	..	..	..	99
Howard University College of Medicine	..	..	..	..	..	3	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
University of Florida College of Medicine	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	..	..	1	..	..	..	4
University of Miami School of Medicine	2	2	..	3	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10
Emory University School of Medicine	1	4	..	1	..	2	1	1	6	..	1	..	2	1	..	..	..	..	..	..	..	20
Medical College of Georgia	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Chicago Medical School	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Northwestern University Medical School	3	7	..	4	6	4	1	1	6	..	2	4	2	1	..	..	..	..	..	..	..	41
Stritch School of Medicine	7	4	..	6	..	6	8	3	4	..	1	..	3	2	..	..	..	..	..	..	..	44
University of Chicago	2	13	..	13	2	2	8	7	20	..	10	..	14	7	2	2	..	2	8	2	2	116
University of Illinois College of Medicine	2	12	..	3	3	9	10	4	10	..	4	1	3	5	..	4	..	..	√	√	√	70
Indiana University School of Medicine	..	..	..	..	..	..	..	2	..	..	2	..	..	..	..	..	..	..	..	..	..	4
State University of Iowa College of Medicine	√	4	..	4	..	5	7	6	8	..	5	..	5	19	..	..	..	..	..	..	..	63
University of Kansas School of Medicine	1	1	..	7	..	..	1	13	3	..	4	..	3	2	4	√	..	1	..	..	√	40
University of Louisville School of Medicine	1	6	..	4	..	..	3	..	4	..	1	..	1	1	..	..	..	..	..	..	..	21
Louisiana State University School of Medicine	..	4	..	1	..	..	..	√	1	..	1	√	..	1	..	..	..	1	..	..	√	9
Tulane University School of Medicine	1	7	..	√	..	1	2	√	8	..	9	..	1	3	1	1	..	1	..	√	√	35
Johns Hopkins University School of Medicine	..	..	..	..	..	..	..	..	2	..	..	..	..	3	..	..	..	..	..	..	..	5
University of Maryland School of Medicine	..	4	..	..	..	..	..	3	4	..	√	..	..	1	8	..	√	..	..	..	..	20
Boston University School of Medicine	√	9	..	4	√	√	1	√	9	..	3	√	5	5	..	..	..	..	..	..	..	36
Harvard Medical School	..	..	..	..	..	..	..	..	22	..	11	1	4	2	..	..	..	..	..	..	..	40
Tufts University School of Medicine	..	..	..	..	..	..	..	..	9	..	..	..	5	3	..	1	..	..	..	√	1	19
University of Michigan Medical School	2	2	..	15	..	..	2	5	1	..	3	1	2	..	..	..	..	..	..	..	..	33
Wayne State University College of Medicine	1	4	..	1	1	√	3*	2	10	..	2	1	√	1*	..	..	..	..	..	..	..	26
University of Minnesota Medical School	7	2	..	16	9	1	5	9	21	4	17	4	10	8	..	√	..	..	..	..	..	113
University of Mississippi School of Medicine	..	..	..	..	..	..	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..	3
St. Louis University School of Medicine	3	9	..	..	..	..	..	2	5	..	1	..	..	..	..	..	..	..	..	..	..	20
University of Missouri School of Medicine	1	6	..	6	..	√	3*	√	1	..	1	..	√	3*	√	..	..	..	..	√	√	21
Washington University School of Medicine	1	..	..	..	1	..	..	1	3	..	4	√	3	2	..	√	..	..	13	..	1	29
Creighton University School of Medicine	1	2	..	√	√	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5
University of Nebraska College of Medicine	1	2	..	√	..	√	3*	1	√	..	√	√	√	2*	..	√	..	√	√	√	√	9
Dartmouth Medical School	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Seton Hall College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Albany Medical College	..	2	..	..	..	..	1	..	2	..	3	..	..	..	..	..	..	..	..	..	..	8
University of Buffalo School of Medicine	√	4	..	3	..	..	..	2	5	..	1	..	3	..	1	..	..	..	..	1	..	20
Columbia University	..	..	..	..	..	..	..	5	18	..	5	..	3	4	..	..	..	..	..	..	..	35
Cornell University Medical College	..	..	2	..	..	..	..	1	3	3	3	√	2	..	..	..	..	..	..	..	..	14
Albert Einstein College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	2
New York Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New York University College of Medicine	1	4	..	1	√	..	..	4	6	..	3	..	..	..	√	6	..	3	..	..	..	28
State University of New York College of Medicine, N. Y.	√	√	..	..	..	..	..	2	2	..	..	..	2	3	..	..	..	..	..	..	..	9
State University of New York, College of Medicine, Syracuse	..	..	..	√	..	..	√	√	√	1	√	..	3	√	√	..	..	..	..	..	..	4
University of Rochester School of Medicine	√	2	24	4	..	..	1	1	11	13	6	..	√	5	1	1	√	1	3	..	1	74
Duke University School of Medicine	2	..	..	1	..	..	..	6	14	..	4	..	..	..	1	5	..	1	3	√	1*	38
Bowman Gray School of Medicine	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
University of North Carolina School of Medicine	..	5	..	6	..	..	1	..	3	..	4	..	..	3	..	..	..	..	..	..	..	22
University of North Dakota School of Medicine	2	2	..	2	..	..	√	5*	..	4	..	..	√	√	..	..	..	..	..	..	..	15
University of Cincinnati College of Medicine	..	..	..	..	..	..	..	3	2	..	2	..	3	4	..	..	..	..	..	..	..	14
Western Reserve University School of Medicine	..	..	..	..	1	..	..	4	15	..	5	1	3	9	1	9	..	2	..	4	3	57
Ohio State University College of Medicine	12	12	..	..	8	..	13	8	3	..	√	..	..	12	..	1	..	..	√	√	2	71
University of Oklahoma School of Medicine	..	2	..	6	1	1	1	4	6	..	5	3	4	2	..	..	..	..	..	..	..	35
University of Oregon Medical School	6	27	..	..	..	√	13	4	..	1	..	..	..	..	..	..	..	..	..	..	..	51
Hahnemann Medical College	1	2	..	..	..	1	1	..	..	..	4	..	..	..	..	..	..	..	..	..	..	9
Jefferson Medical College	..	..	..	..	..	3	1	..	..	..	2	..	6	2	..	..	..	..	..	..	..	14
Temple University School of Medicine	2	2	..	2	5	2	3	√	..	..	√	3	√	1	..	..	..	..	..	..	..	20
University of Pennsylvania	1	..	..	14	..	1	5	3	15	2	40	5	2	17	..	..	..	..	..	..	..	105
Woman's Medical College	..	..	..	..	..	..	..	√	√	..	√	√	√	√	..	..	..	..	..	..	..	..
University of Pittsburgh School of Medicine	..	6	..	..	..	..	..	..	3	..	..	..	..	..	..	4	..	..	..	..	..	13
Medical College of South Carolina	2	√	..	√	√	2	1	√	1	1	√	√	2	√	√	√	..	√	√	√	√	9
University of South Dakota School of Medical Sciences	2	2	..	5	..	..	3	√	..	..	..	..	..	..	..	..	..	..	..	..	..	12
University of Tennessee College of Medicine	..	6	..	3	4	2	4	1	6	..	1	2	4	8	..	..	..	..	..	..	..	41

TABLE 22.—*Advanced Degree Programs and Enrollment in the Basic Medical Sciences*—Continued

	MASTERS							DOCTORATES							POST-DOCTORATES							
	Anatomy	Biochemistry	Biophysics	Microbiology	Pathology	Pharmacology	Physiology	Anatomy	Biochemistry	Biophysics	Microbiology	Pathology	Pharmacology	Physiology	Anatomy	Biochemistry	Biophysics	Microbiology	Pathology	Pharmacology	Physiology	Total Enrollments
Meharry Medical College	..	✓	..	✓	..	..	✓	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vanderbilt University School of Medicine	..	..	..	2	..	..	..	✓	..	6	✓	1	4	1	✓	..	..	..	..	..	1	15
University of Texas Southwestern Medical School	1	3	..	6	..	..	..	..	2	✓	1	..	..	..	..	..	..	..	..	..	..	13
University of Texas Medical Branch	6	..	..	3	..	1	2	2	2	..	..	..	2	6	..	..	..	..	..	..	..	24
Baylor University College of Medicine	5	7	..	5	..	..	2	4	4	..	3	..	..	1	..	..	..	..	..	..	..	31
University of Utah Medical Branch	3	5	..	4	..	✓	1	✓	4	8	✓	9	4	2	..	9	..	✓	..	2	..	51
University of Vermont College of Medicine	..	✓	..	2	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
University of Virginia School of Medicine	1	1	..	1	..	..	1	✓	✓	..	2	..	1	✓	..	..	..	..	..	..	..	7
Medical College of Virginia	2	2	..	✓	✓	..	1	1	✓	..	..	✓	6	2	..	..	..	..	..	..	..	14
University of Washington School of Medicine & Dentistry	..	1	..	13	..	2	3	3	18	..	10	✓	4	11	..	7	..	7	..	1	12	92
West Virginia University School of Medicine	..	5	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11
University of Wisconsin Medical School	3	✓	..	6	1	1	6	3	3	..	4	..	13	6	✓	6	..	1	4	✓	2	59
Marquette University School of Medicine	1	✓	..	3	7	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16
University of Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Enrolled	107	269	28	225	62	67	163	159	419	52	240	36	163	235	35	66	0	22	31	12	26	2,417
Total Schools offering programs	49	58	4	53	24	35	53	55	60	13	55	23	52	56	17	22	2	17	11	16	19	
Total Schools Reporting Enrollment	42	52	4	45	18	26	48	41	55	12	44	13	45	51	10	14	0	12	5	6	10	

* Includes Pharmacology.

† Check (✓) indicates programs available in addition to those for which enrollments are shown.

Therefore, the table depicts less than the minimum number of other than medical students for whom the medical schools have teaching responsibilities. Whenever a school presents less than a complete picture of its total teaching and other responsibilities that require personnel, funds, and facilities, it is diminishing its own opportunities to secure complete understanding of its total needs by legislators, boards of trustees, and others who support the school.

The large number of students other than undergraduate medical students for whom medical schools have educational responsibilities in addition to those imposed by the medical students have significant implications on the personnel, budget, and facility needs of the schools. It is important that these needs take into account the total teaching, research, and service responsibilities of each school to avoid diluting the educational value of any of the programs. A further and more detailed presentation of this aspect was presented in the annual report two years ago.[20]

It should be noted that precautions have been taken in regard to table 21 to prevent duplication. As an example of this, even though the schools were requested not to include residents for the column depicting candidates for advanced degrees, the table includes only those in the basic sciences and fields unlikely to be reported also as residents.

ADVANCED DEGREE PROGRAMS AND ENROLLMENTS IN THE BASIC MEDICAL SCIENCES

The section of this report dealing with unfilled faculty positions again emphasizes the critical personnel needs for teaching posts in medical schools. The most assured pool for future faculty in the basic science disciplines is represented by students now taking advanced study in those disciplines. Table 22 presents the number of students enrolled and additional programs offered by basic science area and by degree level of study for the medical schools in the United States.

Similar information was published in last year's report. In 1955-1956 there were 1,119 students working toward the masters degree and 1,268 working toward the doctoral degree. In 1956-1957 there were 920 students at the masters level and 1,304 at the doctoral level. Although there is an over-all decrease, this is entirely at the masters level, since there has been a slight increase in the number of doctoral students.

During both years, most enrollments at both levels have been in biochemistry, with microbiology and physiology following in order.

The present report also includes a presentation of programs available and enrollments for post-doctoral students. It seems highly likely that there will be a demand and need for expanded educational facilities in medicine in the near future. It is anticipated that information regarding enrollments in advanced degree programs in the basic sciences will be presented in future reports so that all concerned may be kept aware of the pool of potential faculty.

ADVANCED DEGREE PROGRAMS IN THE CLINICAL SCIENCES

In recent years the Council office has received numerous inquiries as to which medical schools offered advanced degrees for graduate study in the clinical subjects. This information is given in table 23 as a response to these inquiries.

In addition to those included in table 23, advanced degree programs are also offered in ophthalmology (Iowa, Tulane, Michigan, Minnesota, Temple), urology (Creighton, Temple, Marquette, Tennessee), anesthesiology (Iowa, Minnesota, Temple), neurology (Georgetown, Michigan, Temple), orthopedic surgery (Northwestern, Temple, Tennessee), dermatology (Tufts, Wayne), physical medicine (Minnesota, Stanford), neurosurgery (Temple), nutrition (Iowa), otorhinology (Temple), and proctology (Temple).

Table 23.—*Advanced Degree Programs in Clinical Sciences*

	Surgery	Medicine	Public Health Preventive Medicine	Obst. Gynec.	Radiology	Pediatrics	Psychiatry
Coll. Med. Evangelists	x						
U-Calif., L. A.					x		
U-Colorado	x	x		x	x	x	x
Yale Univ.			x				
Georgetown Univ.	x						
Med. Coll. Ga.			x				
Northwestern Univ.	x	x		x			
U-Chicago	x						
U-Illinois	x	x		x			
State U-Iowa			x				
Tulane Univ.	x		x				
U-Maryland	x	x					
U-Michigan	x						
Wayne Univ.	x	x		x			
U-Minnesota	x	x	x	x	x	x	x*
St. Louis Univ.		x					
Creighton Univ.	x	x		x	x	x	x*
U-Nebraska		x			x	x	
State U-New York (N. Y.)							x
Cornell Univ.			x				
New York Med. Coll.	x						
U-Cincinnati			x				
Ohio State Univ.	x	x	x	x	x		x
U-Oklahoma			x				
Temple Univ.	x	x		x	x	x	x
U-Tennessee						x	
U-Texas			x				
U-Virginia	x						
U-Washington	x						
U-Wisconsin				x			
Marquette Univ.		x		x			
No. of schools	17	12	10	10	7	6	6

Includes Neurology.

There are thirty-two medical schools which offer advanced degrees (usually at the masters level; some also at the doctoral level). Temple authorizes advanced degrees in 13 clinical areas; Minnesota in 10; Colorado, Iowa, Creighton, and Ohio State in 6 areas each. Such degree programs are most commonly found in surgery (17 schools), medicine (12 schools), public health and preventive medicine, and obstetrics and gynecology (10 schools in each area).

MEDICAL STUDENTS

ENROLLMENTS

For the eighth consecutive year, the number of students enrolled in approved medical schools in the United States has established a new record. Complete enrollment data for the individual schools are shown in table 3. Comparative data for this and preceding years are given in table 24. In order to present a true picture of medical education in the United States, table 3 and subsequent tables unless otherwise noted contain additions in the appropriate columns of the students in the newly developing schools, the University of Florida College of Medicine, Seton Hall College of Medicine and Dentistry, and Albert Einstein College of Medicine.

It should be noted that in this report, as was also the case for the two preceding years, the figures in table 3 for total enrollments by schools and the over-all total enrollment figure include the special and part-time students. The numbers of these students are tabulated for each school in the column after the total enrollment, although they are distributed in the enrollment figures in the prior columns of the table. There has been a 22% increase in the number of part-time and special students in the 1956-1957 school year compared with the previous year, though the total medical student enrollment has increased by on 1.3%.

The median total enrollment in 1956-1957 was 330, compared with 335 in the 1955-1956 year and with 338 in the 1954-1955 year. The average total enrollment was 366.5 this past year, compared with 370 in the previous year and with 375 in 1954-1955 year. There appears to be a trend toward smaller classes. This has been more than compensated by the entrance of students into the entirely new schools as well as into the newly developed third-year and fourth-year programs of the University of Mississippi and of the University of Missouri medical schools.

Table 24.—*Schools, Students, and Graduates in the Medical and Basic Sciences Schools in the United States, 1931-1957*

Yr.	Schools	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	Total	Graduates
1930-1931	76	6,456	5,538	5,080	4,908	21,982	4,735
1931-1932	76	6,260	5,462	4,932	4,885	22,135	4,936
1932-1933	77	6,426	5,479	5,017	4,948	22,466	4,895
1933-1934	77	6,457	5,571	4,988	4,937	22,799	5,035
1934-1935	77	6,356	5,642	5,142	4,905	22,888	5,101
1935-1936	77	6,605	5,458	5,230	5,020	22,564	5,183
1936-1937	77	5,910	5,269	5,140	5,158	22,095	5,377
1937-1938	77	5,791	5,225	4,986	5,036	21,587	5,194
1938-1939	77	5,764	5,160	4,947	4,921	21,302	5,089
1939-1940	77	5,794	5,177	4,921	4,894	21,271	5,097
1940-1941	77	5,837	5,254	4,969	4,849	21,379	5,275
1941-1942	77	6,218	5,406	5,087	4,942	22,031	5,163
1942-1943	76	6,425	5,828	5,278	5,100	22,631	5,223
1943-1944	77	6,561	6,071	5,640	5,257	23,529	5,134
1944 (2nd Session)	77	6,648	6,140	6,084	5,794	24,666	5,169
1944-1945	77	6,523	5,979	5,700	5,826	24,028	5,136
1945-1946	77	6,060	5,750	5,751	5,655	23,216	5,826
1946-1947	77	6,564	5,575	5,767	5,994	23,900	6,389
1947-1948	77	6,487	5,758	5,154	5,340	22,739	5,543
1948-1949	78	6,688	6,194	5,702	5,086	23,670	5,094
1949-1950	79	7,042	6,344	6,079	5,638	25,103	5,553
1950-1951	79	7,177	6,690	6,263	6,056	26,186	6,135
1951-1952	79	7,436	6,864	6,577	6,195	27,076	6,080
1952-1953	79	7,425	7,063	6,725	6,475	27,688	6,668
1953-1954	80	7,449	7,068	6,983	6,727	28,227	6,861
1954-1955	81	7,576	7,104	6,957	6,946	28,583	6,977
1955-1956	82	7,686	7,174	6,893	6,886	28,639	6,845
1956-1957	82	7,791	7,204	7,023	6,834	28,852	6,796

Including data for schools developing new programs which have not yet been approved would increase the totals by the following figures

1956-1957	85	8,014	7,259	7,023	6,834	29,130	6,796

Five schools had a total enrollment each of more than 600. The University of Tennessee led in this respect with a total enrollment of 787. The University of Michigan and the University of Tennessee medical schools admitted more than 200 students to their entering classes (202 and 225 respectively). There were again this year six additional schools with first-year enrollments of 150 or more students.

TABLE 25.—*Number of Applicants and Completed Applications by School for Class First Entering 1956-1957**

School	Size of Freshman Class	No. of Applications Men	Women	Total	Total Applications Filed by Applicants to Each School	Av. No. of Applications per Applicant
Alabama	80	255	25	280	1,341	4.8
Albany	61	1,153	62	1,215	12,524	10.3
Arkansas	92	159	5	164	272	1.7
Baylor	81	841	36	877	6,286	7.1
Boston	72	1,085	73	1,158	11,574	10.0
Bowman Gray	52	597	33	630	5,009	8.0
Buffalo	80	791	36	827	8,588	10.4
California, L. A.	50	514	43	557	3,759	6.7
California, S. F	76	490	43	533	3,555	6.7
Chicago Medical	71	1,032	26	1,058	10,887	10.3
Chicago, Univ. of	72	948	75	1,023	9,017	8.8
Cincinnati	93	1,054	31	1,085	8,586	7.9
Colorado	82	216	16	232	579	2.5
Columbia	118	1,447	165	1,612	13,828	8.6
Cornell	83	1,183	119	1,302	11,665	9.0
Creighton	76	652	23	675	5,136	7.6
Dartmouth	24	303	9	312	2,927	9.4
Duke	76	781	38	819	6,715	8.2
Einstein	96	1,024	69	1,093	11,250	10.3
Emory	72	614	32	646	4,369	6.8
Florida	47	381	18	399	2,047	5.1
Georgetown	111	913	39	952	8,812	9.3
George Washington	102	1,298	57	1,355	12,736	9.4
Georgia	95	247	19	266	583	2.2
Hahnemann	108	1,003	55	1,058	8,909	8.4
Harvard	115	1,257	113	1,370	10,560	7.7
Howard	76	407	44	451	2,333	5.2
Illinois	189	613	54	667	2,906	4.4
Indiana	157	435	17	452	1,898	4 2
Iowa	120	179	10	189	419	2.2
Jefferson	178	1,827	—	1,827	12,718	7.0
Johns Hopkins	77	871	79	950	8,513	9.0
Kansas	104	329	26	355	2,121	6 0
Louisiana	117	259	18	277	1,053	3.8
Louisville	100	269	16	285	982	3.4
Loyola (Stritch)	88	786	41	827	5,860	7.1
Marquette	102	976	37	1,013	7,190	7.1
Maryland	92	314	14	328	2,142	6.5
Medical Evangelists	97	186	16	202	472	2.3
Meharry	64	467	43	510	2,407	4.7
Miami	71	180	9	189	708	3.7
Michigan	200	630	46	676	3,147	4.7
Minnesota	128	287	13	300	1,273	4.2
Mississippi	76	175	7	182	346	1 9
Missouri	75	169	9	178	544	3.1
Nebraska	81	201	12	213	743	3.5
New York Medical	128	1,833	136	1,969	18,048	9.2
New York University	131	1,357	133	1,490	14,861	10.0
North Carolina	66	278	15	293	1,634	5.6
North Dakota	39	94	5	99	423	4.3
Northwestern	131	1,404	78	1,482	11,350	7.7
Ohio State	145	492	16	508	2,185	4.3
Oklahoma	99	257	18	275	1,045	3.8
Oregon	73	363	19	382	2,514	6.6
Pennsylvania	126	1,416	84	1,500	12,877	8.6
Pittsburgh	99	559	33	592	4,290	7.2
Puerto Rico	52	106	19	125	414	3.3
Rochester	70	1,098	76	1,174	11,904	10.1
Saint Louis	123	1,046	34	1,080	8,585	7.9
Seton Hall	80	817	65	882	7,136	8.1
South Carolina	80	157	5	162	302	1.9
South Dakota	39	214	10	224	1,712	7.6
Southern California	68	630	46	676	4,860	7.2
Southwestern	102	425	26	451	1,238	2.7
Stanford	62	482	29	511	3,795	7.4
State U. of N. Y. (N. Y.)	150	1,383	120	1,503	14,155	9.4
State U. of N. Y. (Syracuse)	78	1,021	66	1,087	10,740	9.9
Temple	133	1,479	73	1,552	12,078	7.8
Tennessee	199	517	28	545	1,421	2.6
Texas	156	468	29	497	1,280	2.6
Tufts	112	703	44	747	6,470	8.7
Tulane	129	886	50	936	6,917	7.4
Utah	51	270	2	272	1,821	6.7
Vanderbilt	50	757	36	793	7,257	9.2
Vermont	50	378	18	396	3,373	8.5
Virginia, Univ. of	76	682	30	712	6,025	8.5
Virginia, Med. Coll. of	83	314	21	335	2,085	6.2
Washington, Univ. of	75	444	17	461	2,706	5.9
Washington, St. Louis	86	1,265	51	1,316	10,562	8.0
Wayne	75	369	29	398	1,379	3.5
Western Reserve	84	1,198	74	1,272	10,379	8.2
West Virginia	31	117	5	122	423	3.5
Wisconsin	83	181	12	193	712	3.7
Woman's Medical	50	—	222	222	1,259	5.7
Yale	80	907	88	995	9,031	9.1
Total	7,824			59,798†		3.8

* Footnote 21.

† Total number of applications filed by all applicants to all medical schools.

The entering class was the largest total ever enrolled (table 3). Of the increase of 272 in this total compared with last year, 54% is accounted for by the new schools, the University of Florida College of Medicine and Seton Hall College of Medicine. A major part of the remaining increase occurred because of substantial increases in the size of the first-year classes of the University of Illinois (up 14%), the University of Missouri (up 67%), and Albert Einstein College of Medicine (up 71%). The changes in the latter two schools were coincidental with their new programs and were anticipated. There was no substantial alteration in the class sizes of the other schools. The median first-year class for the four-year schools consisted of 84 students in 1956-1957, compared with 87 students in the previous year. The average first-year class in the four-year schools was 94 compared with 97 in the 1955-1956 year.

Table 25, prepared by Dr. Helen Gee for the Association of American Medical Colleges annual study of applicants,[21] lists by schools the number of applicants and applications to each of the schools for the 1956-1957 entering class. It should be noted that the totals of the applicants refer to applications and not to individual applicants. Although, as the table indicates, applications totalled 59,798, the number of individual applicants was 15,918. The Gee study total of 7,824 in table 25 for the 1956-1957 first-year class differs from the total of 8,014 given in table 3. The latter figure includes special and part-time students as well as those students repeating the first year, while table 25 includes only full-time students entering the first medical year for the first time. For a complete and detailed study of applicants, applications, and acceptances for this class, the Gee study should be consulted.

TABLE 26.—*Distribution of Students and Graduates in the United States and Canada by Sex, 1956-1957*

	Students		Graduates	
	Men	Women	Men	Women
United States				
Medical College of Alabama	277	22	69	2
University of Arkansas	323	18	74	3
College of Medical Evangelists	360	16	93	5
University of Southern California	255	11	66	2
Stanford University	217	15	52	5
University of California, Los Angeles	170	10	33	3
University of California, San Francisco	290	22	71	3
University of Colorado	299	23	68	2
Yale University	301	21	76	4
Georgetown University	402	22	102	12
George Washington University	353	19	83	5
Howard University	261	36	64	8
University of Miami	222	14	30	4
University of Florida	44	3	...	..
Emory University	278	8	72	2
Medical College of Georgia	356	20	73	5
Chicago Medical School	276	1	66	0
Northwestern University	496	24	122	4
Stritch School of Medicine	318	12	80	2
University of Chicago School of Medicine	265	22	65	4
University of Illinois	606	38	139	7
Indiana University	562	21	132	7
State University of Iowa	418	15	95	2
University of Kansas	398	17	102	5
University of Louisville	360	19	88	2
Louisiana State University	407	21	93	3
Tulane University	493	13	123	1
Johns Hopkins University	272	21	62	5
University of Maryland	351	12	89	5
Boston University	265	21	67	2
Harvard Medical School	484	31	140	5
Tufts University Medical School	416	25	108	5
University of Michigan	727	35	177	9
Wayne University	268	17	63	2
University of Minnesota	454	20	107	2
University of Mississippi	208	6	23	1
St. Louis University	469	12	112	0
University of Missouri	164	6	21	0
Washington University	335	12	89	4
Creighton University	278	9	66	3
University of Nebraska	309	9	77	0
Dartmouth Medical School	48	0	...	..
Seton Hall University	71	9	...	..
Albany Medical College	221	9	46	3
State University of New York, New York	545	42	143	2
University of Buffalo	288	12	62	3
Albert Einstein College of Medicine	144	7	...	..
Columbia University	427	45	101	13
Cornell University	314	21	80	6
New York Medical College	459	27	104	5
New York University	473	49	121	6
University of Rochester	268	11	60	5
State University of New York, Syracuse	273	15	61	2
University of North Carolina	244	8	56	2
Duke University	304	15	76	4
Bowman-Gray School of Medicine	194	15	49	6
University of North Dakota	75	5	...	..
University of Cincinnati	320	16	76	3
Western Reserve University	295	29	68	5
Ohio State University	552	15	129	4
University of Oklahoma	354	19	85	3
University of Oregon	278	15	63	2
Hahnemann Medical College	377	21	94	3
Jefferson Medical College	682	0	165	0
Temple University	465	26	111	3
University of Pennsylvania	483	20	119	7
Woman's Medical College of Philadelphia	...	182	...	40
University of Pittsburgh	349	13	88	3
Medical College of South Carolina	294	11	71	3
University of South Dakota	74	3	...	..
University of Tennessee	753	34	182	3
Meharry Medical College	239	19	52	1
Vanderbilt University	193	9	51	2
Southwestern Medical School	373	17	88	3
University of Texas	565	36	119	10
Baylor University	321	15	86	4
University of Utah	207	5	55	2
University of Vermont	168	11	39	1
University of Virginia	282	15	73	2
Medical College of Virginia	337	27	87	8
University of Washington	276	14	69	3
West Virginia University	54	4	...	..
University of Wisconsin	300	18	75	2
Marquette University	379	18	96	4
University of Puerto Rico	159	25	34	7
Totals	27,484	1,646	6,466	330
Canada				
University of Alberta	203	9	39	3
University of British Columbia	191	15	44	4
University of Manitoba	222	8	114	2
Dalhousie University	210	13	45	4
Queen's University	205	14	51	5
University of Ottawa	209	13	46	4
University of Western Ontario	213	13	50	4
University of Toronto	509	56	123	16
McGill University	401	24	90	7
University of Montreal	421	24	90	10
Laval University	509	29	110	3
University of Saskatchewan	123	18	27	2
Totals	3,419	236	829	64

Enrollment data for approved Canadian medical schools are given in table 4. Comparison with similar data for last year reveals a diminution in total enrollment even though the four-year program of the University of Saskatchewan was in effect last year for the first time. The median total enrollment in 1956-1957 was 224 and the average was 304, compared with an average total enrollment in 1955-1956 of 327. A decrease of 23% in the total enrollment of Queen's University Faculty of Medicine more than counterbalanced the additional students in the University of Saskatchewan program. However, this decrease was more apparent than real. A readjustment in the curriculum in the 1956-1957 year provided for completion of the medical course in four years rather than five, with a second premedical year added to the over-all requirements. Therefore, the enrollments for Queen's University this year totaled four classes rather than five classes, as was the case last year and previously. Those students enrolled in the premedical years and in a required intern year in Canadian schools are not included in the total enrollment in table 4. There was a slightly smaller total first-year Canadian medical class in 1956-1957 than in the preceding year, with 6 of the 12 approved schools sharing in this diminution, though each of the smaller first-year classes diminished by less than 10%.

It is notable that 92 United States citizens were enrolled in the first medical year in Canadian schools as compared with 8 Canadian citizens enrolled in the first-year class of United States medical schools (table 27). More detailed information in regard to this can be found in the geographical section of this report.

ENROLLMENT OF WOMEN STUDENTS

Information by school on the number of men and women enrolled and graduated is shown in table 26. Dartmouth and Jefferson continued to limit their enrollments to men, and Woman's Medical College enrolled only women. The total number of women students showed an increase of 4.6% compared with last year, twice the increase shown last year as compared with the preceding year. Only 19 women students, or 1.1% of their total enrollment, is accounted for by the inclusion this year in the table of the three newly developing medical schools (Seton Hall, Albert Einstein, and University of Florida). The number of women graduates was again smaller than it was last year, the smallest in 10 years.

Excluding Woman's Medical College, the medical schools of three universities (Columbia, New York University, and State University of New York, New York City) each enrolled more than 40 women. Four other medical schools each enrolled 35 or more women (Howard University, University of Illinois, University of Michigan, and University of Texas). In four medical schools, women accounted for 10% or more of the total enrollment (Columbia University, Howard, New York University, University of Puerto Rico). Women represented more than 10% of the graduating class of five schools (Bowman, Gray, Columbia, Georgetown, University of Puerto Rico, and University of Miami).

The increasing absolute and proportionate enrollment each year for the past four years probably presages that the absolute decrease in women graduates will be arrested and may begin to increase in the near future.

GEOGRAPHICAL SOURCE OF ENTERING STUDENTS

Table 27 presents the residence of students at the time of their enrollment in the medical schools in the United States and Canada. The information is derived from enrollment data from the medical schools.

This table indicates that 40% of all first-year students in the United States schools came from six states (New York, Pennsylvania, Illinois, Ohio, California, and Texas), as was the case last year. The first-year enrollment of all the medical schools in these states represented 41% of the total enrollment for the nation. Almost 38% of all medical schools are located in the same states.

There were fewer than 20 first-year students in the medical schools in the United States from each of five states (Nevada, Delaware, Wyoming, New Hampshire, and Montana), and fewer than 25 students from each of five other states (Maine, Idaho, Rhode Island, Vermont, and New Mexico). Of these 10 states, only New Hampshire and Vermont have medical schools. Arizona had 22 medical students last year and 43 this year, on this list of states having the fewest students. The 72 students from the five states supplying the fewest medical students together with the 115 students from the five other states represented only 2.3% of the total first-year class, a proportion similar to that reported last year and similar to the proportions found for these states in the preceding two years. The 2.3% figure would have been identical (2.4%) with the proportion last year if, as was the case in that instance, students in the three newly developing schools were not included, as they have been this year.

Table 28 lists the states in ascending order according to the number of enrolled first-year medical students per 100,000 population. The six states with the largest number of first-year students are well scattered through this list, with half having the same as or less than the median number of students per 100,000 population (4.4) and half having more than the median number. With the exception of Vermont and Wyoming, the other eight states having the smallest number of first-year students enrolled in medical schools in all instances had fewer students than the median number.

The over-all ratio of students per 100,000 population, excluding members of the armed forces, appears to have increased from 4.56 to 4.76 in the past year. This apparent increase occurred entirely by including this year the first-year students in the three newly developing schools (Seton Hall, Albert Einstein, and the University of Florida). Including their entering students in tables depicting medical students as well as in discussion of these tables would seem to present a more realistic picture than could be presented otherwise. In the report for the 1955-1956 year, the first-year students in the newly developing Albert Einstein College of Medicine were not included in any tables which appeared at that time subsequent to table 1. Therefore the ratios for the two years do not have a comparable base.

There were 12 schools, all state-owned but one, that enrolled as first-year medical students only those resident in the state in which the school is located. This compares with 11 schools last year and 13 in the 1954-1955 year. When the list of schools for the 1956-1957 year having enrollment limited to home-state residents is compared with a similar

TABLE 27.—*Geographical Source of*

	SCHOOL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine
1	Medical College of Alabama	77	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2	University of Arkansas	..	..	100	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	College of Medical Evangelists	1	2	1	21	3	..	..	1	..	..	1	1	..	2	2	2	..	..
4	University of Southern California School of Medicine	..	2	..	59	..	..	..	..	..	..	1	1	..	..	..	..	1	..
5	Stanford University School of Medicine	..	2	..	44	..	..	..	..	..	..	..	2	2	..	..	..	..	..
6	University of California School of Medicine, Los Angeles	..	1	..	48	..	..	..	..	..	..	1	..	..	..	..	..	..	..
7	University of California School of Medicine, San Francisco	..	..	..	78	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	Unive[illegible]l of Medicine	..	5	..	..	63	..	..	..	..	..	..	..	..	..	..	..	..	..
9	Yale [illegible]cine	1	..	..	4	..	18	..	1	..	1	..	5	..	..	1	..	..	..
10	Georg[illegible] of Medicine	..	..	..	..	..	4	..	10	..	..	..	..	..	..	..	..	1	..
11	Georg[illegible] School of Medicine	1	1	..	9	..	5	1	18	..	..	2	3	..	1	..	..	..	..
12	Howard University College of Medicine	5	..	..	3	..	..	..	4	4	1	..	1	1	..	..	..	5	..
13	University of Florida College of Medicine*	..	..	..	..	..	..	..	..	44	..	..	..	..	..	..	..	..	..
14	University of Miami School of Medicine	..	..	..	..	..	..	..	..	71	..	..	..	..	..	..	..	..	..
15	Emory University School of Medicine	11	..	..	..	..	..	..	..	18	26	..	1	..	..	..	..	..	..
16	Medical College of Georgia	..	..	..	..	..	..	..	..	..	102	..	..	..	..	..	..	..	..
17	Chicago Medical School	..	..	..	..	..	..	..	..	..	..	..	12	1	..	..	..	..	..
18	Northwestern University Medical School	..	4	..	7	..	..	..	..	2	..	2	56	5	1	2	1	..	..
19	Stritch School of Medicine of Loyola University	..	..	..	4	..	1	..	..	..	..	..	44	4	1	..	..	1	..
20	University of Chicago, The School of Medicine	..	..	..	8	2	..	..	..	2	..	..	36	4	..	..	..	..	..
21	University of Illinois College of Medicine	..	..	..	..	..	..	..	..	..	..	..	190	..	..	..	..	..	..
22	Indiana University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	155	..	..	1	..	..
23	State University of Iowa College of Medicine	..	..	..	..	..	..	..	..	..	..	..	4	..	113	..	..	..	..
24	University of Kansas School of Medicine	..	1	..	4	..	1	..	..	..	..	..	..	..	..	85	..	..	..
25	University of Louisville School of Medicine	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	96	..	..
26	Louisiana State University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	125	..
27	Tulane University of Louisiana School of Medicine	11	4	4	3	..	..	..	..	9	2	..	1	..	..	2	1	16	..
28	Johns Hopkins University School of Medicine	2	1	..	5	..	..	1	1	1	5	..	2	2	..	..	..	1	..
29	University of Maryland School of Medicine	..	..	..	1	..	2	..	..	2	..	1	..	..	..	..	..	..	..
30	Boston University School of Medicine	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..	1
31	Harvard Medical School	..	1	..	7	1	2	..	..	1	..	1	2	2	1	..	1	..	..
32	Tufts University School of Medicine	..	..	..	1	..	15	..	..	..	..	..	..	..	..	..	..	..	8
33	University of Michigan Medical School	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
34	Wayne State University College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
35	University of Minnesota Medical School	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
36	University of Mississippi School of Medicine	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
37	University of Missouri School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
38	St. Louis University School of Medicine	1	1	1	17	..	3	..	..	4	..	1	17	1	1	5	..	1	..
39	Washington University School of Medicine	2	1	..	5	1	..	..	..	3	..	3	10	1	1	1	1	..	..
40	Creighton University School of Medicine	..	..	..	18	1	..	..	..	..	..	1	3	..	5	2	..	..	..
41	University of Nebraska College of Medicine	..	..	..	1	..	..	..	..	..	..	..	..	1	3	..	..	..	..
42	Dartmouth Medical School	..	1	..	1	3	..	..	..	..	..	..	2	2	..	..	..	..	1
43	Seton Hall College of Medicine and Dentistry*	..	..	..	..	..	3	..	1	..	..	..	1	..	..	..	..	..	..
44	Albany Medical College	..	..	..	1	..	7	..	..	..	..	..	..	..	..	..	..	..	..
45	University of Buffalo School of Medicine	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
46	Columbia University College of Physicians and Surgeons	1	2	..	3	..	5	..	1	2	..	..	1	1	..	..	..	..	1
47	Cornell University Medical College	1	2	..	5	1	6	..	1	..	..	..	2	..	..	..	1	..	2
48	Albert Einstein College of Medicine*	..	..	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..
49	New York Medical College, Flower and Fifth Avenue Hospitals	..	..	..	..	..	6	..	..	..	1	..	..	..	..	..	..	..	1
50	New York University College of Medicine	..	..	..	..	..	3	..	..	1	..	..	..	..	..	..	2	..	..
51	State University of New York College of Medicine, New York City	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
52	State University of New York College of Medicine, Syracuse	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
53	University of Rochester School of Medicine and Dentistry	..	..	..	2	..	3	1	1	1	..	..	2	1	..	..	..	1	..
54	Duke University School of Medicine	..	..	..	1	..	..	..	4	9	1	..	2	..	..	..	1	..	1
55	Bowman Gray School of Medicine of Wake Forest College	..	..	..	..	..	..	..	1	5	3	..	..	..	..	..	2	..	..
56	University of North Carolina School of Medicine	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..
57	University of North Dakota School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
58	University of Cincinnati College of Medicine	..	..	..	2	..	..	..	..	2	..	..	2	1	..	..	7	..	..
59	Western Reserve University School of Medicine	1	..	..	..	..	..	..	..	..	..	1	5	..	..	2	..	..	..
60	Ohio State University College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
61	University of Oklahoma School of Medicine	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
62	University of Oregon Medical School	..	1	..	1	..	..	..	..	..	..	5	..	..	..	..	..	..	..
63	Hahnemann Medical College and Hospital of Philadelphia	..	..	..	1	..	1	3	..	..	..	..	..	..	..	..	..	..	..
64	Jefferson Medical College of Philadelphia	..	..	1	..	2	2	..	..	2	..	..	..	1	..	..	..	..	..
65	Temple University School of Medicine	..	..	..	..	..	..	2	..	1	..	1	..	..	..	..	..	..	..
66	University of Pennsylvania School of Medicine	..	..	1	3	..	2	3	1	2	..	..	1	..	..	..	1	..	1
67	Woman's Medical College of Pennsylvania	..	..	..	5	..	..	..	..	..	1	..	1	..	..	..	..	..	..
68	University of Pittsburgh School of Medicine	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..
69	Medical College of South Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
70	University of South Dakota School of Medical Sciences	..	..	..	2	2	..	..	..	..	..	..	4	..	4	..	..	..	..
71	University of Tennessee College of Medicine	2	2	2	..	1	..	..	..	7	3	..	..	..	..	..	5	..	..
72	Meharry Medical College	1	..	..	3	..	..	..	..	6	3	..	1	1	..	..	..	11	..
73	Vanderbilt University School of Medicine	6	..	1	..	..	..	..	..	3	..	..	1	..	..	..	7	..	..
74	University of Texas Southwestern Medical School	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
75	University of Texas Medical Branch	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
76	Baylor University College of Medicine	..	5	1	4	2	..	..	2	..	1	..	3	..	..	..	2	1	..
77	University of Utah School of Medicine	..	4	..	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..
78	University of Vermont College of Medicine	..	..	..	..	..	11	..	..	..	..	..	..	..	..	..	..	..	5
79	University of Virginia Department of Medicine	..	..	..	..	..	..	2	1	1	1	..	1	..	..	..	..	..	..
80	Medical College of Virginia	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
81	University of Washington School of Medicine	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
82	West Virginia University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
83	University of Wisconsin Medical School	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
84	Marquette University School of Medicine	..	..	..	5	..	..	..	..	1	..	..	7	1	1	..	..	..	..
85	University of Puerto Rico School of Medicine	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Totals	125	43	112	396	82	107	13	49	205	153	23	428	190	135	102	131	164	21
86	University of Alberta Faculty of Medicine	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
87	University of British Columbia School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
88	University of Manitoba Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
89	Dalhousie University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
90	Queen's University Faculty of Medicine†	..	..	..	..	..	2	..	..	..	..	..	3	..	..	..	..	..	..
91	University of Ottawa Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
92	University of Western Ontario Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
93	University of Toronto Faculty of Medicine†	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1
94	McGill University Faculty of Medicine	..	..	..	5	..	5	..	..	..	..	..	..	..	..	..	..	..	2
95	University of Montreal Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
96	Laval University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
97	University of Saskatchewan College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
		..	..	..	5	..	8	..	..	..	..	..	4	..	..	..	1	..	6
	Totals	125	43	112	401	82	115	13	49	205	153	23	432	190	135	102	132	164	27
	Grand Totals	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

Marginal Number

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* Newly developing medical school not yet eligible for full approval.

† Figures are for students in premedical year.

Entering Students 1956-1957

19 Maryland	20 Massachusetts	21 Michigan	22 Minnesota	23 Mississippi	24 Missouri	25 Montana	26 Nebraska	27 Nevada	28 New Hampshire	29 New Jersey	30 New Mexico	31 New York	32 North Carolina	33 North Dakota	34 Ohio	35 Oklahoma	36 Oregon	37 Pennsylvania	38 Rhode Island	39 South Carolina	40 South Dakota	41 Tennessee	42 Texas	43 Utah	44 Vermont	45 Virginia	46 Washington	47 West Virginia	48 Wisconsin	49 Wyoming	50 U.S. Territories and Possessions	51 Canada	52 Foreign	53 Home State	54 Out of State	55 Totals	Marginal Number
..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	77	4	81	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	100	0	100	2
3	2	5	1	..	..	..	3	..	..	1	..	4	..	..	4	1	2	2	..	..	2	1	1	..	..	1	7	..	..	..	2	3	16	21	77	98	3
..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	59	9	68	4
..	1	..	1	..	..	1	..	..	..	..	..	..	..	..	1	..	3	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	1	44	18	62	5
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	2	50	6
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	78	0	78	7
..	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	63	21	84	8
..	8	1	1	..	1	1	..	2	..	2	..	21	..	..	..	..	..	5	1	..	..	..	..	1	..	..	..	..	1	..	1	..	3	18	62	80	9
5	13	..	..	..	..	..	..	..	..	24	..	36	..	..	4	..	..	9	2	..	..	..	..	..	..	2	..	..	..	..	1	..	3	10	104	114	10
11	2	2	2	..	2	..	..	..	..	6	..	9	1	..	1	..	2	8	..	..	..	..	..	2	..	2	1	5	2	..	1	..	2	18	84	102	11
..	..	2	1	3	..	..	..	..	..	2	..	10	2	..	3	2	..	3	..	2	..	1	5	..	..	2	..	2	..	..	1	..	13	4	74	78	12
..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	44	3	47	13
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	71	0	71	14
1	2	..	..	1	..	..	..	..	..	1	..	3	1	..	..	..	..	3	..	2	..	2	..	..	..	..	..	1	..	..	..	..	1	26	48	74	15
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	102	0	102	16
..	..	1	..	..	..	..	..	..	..	7	..	52	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	12	62	74	17
1	2	6	2	..	..	..	2	1	..	7	1	5	..	..	10	..	..	..	..	..	..	..	1	..	..	2	3	1	7	..	1	..	1	56	77	133	18
..	1	5	1	..	..	..	..	..	..	1	..	6	..	..	7	..	2	3	..	..	..	..	..	..	..	..	1	..	3	..	..	..	3	44	44	88	19
1	..	..	1	1	..	..	..	..	..	1	..	7	..	..	2	..	..	1	..	..	..	..	1	..	..	..	..	2	3	..	..	..	..	36	36	72	20
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	190	1	191	21
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	155	4	159	22
..	..	1	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	113	9	122	23
..	..	..	..	..	8	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	85	19	104	24
..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	96	8	104	25
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	125	0	125	26
..	2	..	1	27	4	1	..	..	..	1	1	1	..	..	2	5	..	1	1	..	..	2	18	..	..	..	..	..	..	1	4	..	6	16	118	134	27
17	3	1	1	..	..	..	1	..	..	7	..	9	1	..	2	..	1	7	..	..	..	..	1	..	..	2	2	1	..	1	..	..	..	17	61	78	28
71	2	..	..	..	..	..	..	..	..	2	..	2	..	..	1	..	..	2	..	..	..	..	..	2	1	..	1	2	..	..	1	..	..	71	22	93	29
1	42	1	..	..	..	..	..	..	1	4	..	11	..	1	1	..	..	1	5	..	..	..	..	..	..	..	..	..	..	..	1	..	..	42	34	76	30
..	24	3	..	..	3	..	..	..	3	..	6	29	1	..	10	..	1	5	4	..	..	2	1	..	..	3	1	..	1	..	..	1	1	24	91	115	31
..	66	..	..	..	..	..	..	1	2	4	..	9	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	1	..	..	66	46	112	32
..	1	182	..	..	1	..	..	..	..	..	..	3	..	..	6	..	1	3	..	..	..	1	..	1	..	..	..	..	..	..	2	..	..	182	20	202	33
..	..	77	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	77	0	77	34
..	..	..	117	..	..	2	1	..	..	..	..	..	..	1	..	..	..	1	..	..	2	..	1	..	..	..	..	..	1	1	..	..	2	117	13	130	35
..	..	..	..	74	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	74	2	76	36
..	..	..	..	..	75	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75	0	75	37
..	2	1	2	..	21	2	1	..	..	2	..	10	..	..	15	1	..	1	..	..	2	..	3	1	..	..	1	..	..	..	1	..	4	21	102	123	38
1	2	..	..	..	16	2	..	..	..	1	..	12	..	..	1	2	..	..	..	..	..	..	10	2	1	..	1	1	2	..	2	1	..	16	70	86	39
..	..	..	1	..	3	1	15	..	..	1	1	7	..	3	..	..	1	..	..	..	2	..	..	..	..	..	6	..	..	1	3	..	1	15	61	76	40
..	..	..	..	..	..	1	79	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	79	8	87	41
..	2	1	..	..	..	..	..	..	2	3	..	4	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	22	24	42
..	1	1	..	..	..	..	..	..	..	41	..	25	..	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	41	39	80	43
..	5	..	..	..	..	..	..	..	..	4	..	45	..	..	2	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	45	23	68	44
..	1	..	..	..	..	..	..	..	..	6	..	70	..	..	1	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	2	..	..	70	14	84	45
..	6	1	1	..	1	2	..	..	1	14	..	55	1	..	3	2	..	5	..	..	2	..	1	..	1	..	1	1	..	..	1	..	4	55	65	120	46
1	1	1	..	..	2	..	..	..	1	8	..	36	..	..	..	1	..	5	..	..	..	..	..	1	..	..	1	..	1	2	..	..	2	36	48	84	47
..	..	..	..	..	..	..	..	..	..	5	..	81	..	..	3	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	81	15	96	48
1	12	..	..	..	..	..	..	..	..	26	..	71	1	..	2	..	..	4	1	..	..	..	1	..	..	..	..	1	..	..	..	..	..	71	57	128	49
1	5	..	..	..	..	..	..	..	..	7	..	111	..	..	1	..	..	1	..	..	..	..	..	..	..	..	1	1	1	1	..	..	..	111	25	136	50
..	1	..	..	..	..	..	..	..	..	5	..	146	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	146	9	155	51
..	..	..	..	..	..	..	..	..	..	2	..	76	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	76	3	79	52
1	2	2	..	..	..	..	..	..	1	4	..	40	..	..	3	..	..	1	..	..	..	..	..	..	..	..	..	1	1	1	1	1	..	40	31	71	53
1	1	..	..	..	..	..	..	..	..	6	..	3	23	..	1	1	..	2	..	8	..	4	..	..	..	6	..	2	..	..	1	..	..	23	55	78	54
1	..	..	2	..	..	..	..	..	..	..	..	3	30	..	1	..	..	..	..	..	..	1	..	..	..	2	..	3	..	..	..	..	..	30	24	54	55
..	..	..	..	..	..	..	..	..	..	..	..	1	63	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	63	4	67	56
..	..	..	1	..	..	..	..	..	..	..	..	..	..	37	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	37	4	41	57
..	..	1	..	..	..	..	..	..	..	1	..	2	..	..	74	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	74	20	94	58
..	2	4	1	1	1	..	..	..	..	2	..	7	..	..	56	..	..	5	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	56	35	91	59
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	150	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	150	0	150	60
..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	96	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	96	5	101	61
..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	58	..	..	..	..	..	..	..	..	..	5	..	..	..	3	..	..	58	18	76	62
1	1	1	..	..	..	..	..	..	..	26	..	3	..	..	..	..	..	68	1	..	..	..	..	..	..	..	1	1	..	..	..	..	..	68	40	108	63
..	1	1	..	..	..	..	..	..	..	14	..	8	2	..	5	..	..	135	..	..	..	..	..	..	..	..	..	4	..	..	1	1	..	135	45	180	64
..	..	..	..	..	..	..	..	..	..	21	..	4	..	..	..	..	..	98	..	..	1	..	..	..	1	..	1	..	..	..	4	..	3	98	39	137	65
4	1	1	..	..	2	..	..	..	..	9	..	5	2	1	2	..	..	76	2	..	..	1	1	..	..	..	..	..	2	..	..	..	2	76	50	126	66
..	3	2	1	..	..	..	..	..	..	10	..	12	..	..	2	..	..	12	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	12	38	50	67
..	1	1	..	..	..	..	..	..	..	1	..	7	..	..	7	..	..	79	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	79	21	100	68
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	80	..	..	..	..	..	..	..	..	..	..	..	..	..	80	0	80	69
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	25	..	..	..	..	..	1	..	1	..	..	..	1	25	16	41	70
..	..	..	..	12	3	..	..	..	..	..	..	..	5	..	..	3	..	..	..	1	..	174	3	..	..	2	..	..	..	..	..	..	..	174	51	225	71
2	..	1	..	5	..	..	..	..	..	1	..	1	8	..	2	..	..	3	..	4	..	6	8	..	..	4	..	1	..	..	..	..	2	6	68	74	72
2	..	1	..	1	2	..	..	..	..	1	..	1	1	..	..	1	..	1	..	..	..	24	..	..	..	..	..	..	..	..	..	..	1	24	30	54	73
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	106	..	..	..	..	..	..	..	..	..	..	106	0	106	74
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	164	..	..	..	..	..	..	..	..	..	..	164	0	164	75
..	2	..	..	..	3	1	..	..	..	..	2	1	1	..	3	8	..	1	..	..	1	1	33	..	..	1	..	..	..	1	..	..	2	33	49	82	76
..	..	..	1	..	..	..	..	2	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	42	..	..	..	..	..	..	..	..	..	42	12	54	77
..	3	..	..	..	..	..	..	..	7	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	19	..	..	..	..	..	..	..	1	19	31	50	78
1	2	..	..	..	..	..	..	..	..	1	..	7	..	..	1	..	..	..	..	..	..	..	..	..	..	54	..	3	1	..	..	..	..	54	22	76	79
..	1	..	..	..	..	..	..	..	..	2	..	2	4	..	..	..	..	..	..	..	..	1	..	..	..	66	..	6	..	..	..	..	1	66	18	81	80
..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	69	..	..	1	2	..	..	69	7	76	81
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	31	0	31	82
..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	80	..	..	..	..	80	3	83	83
..	..	5	5	..	..	1	..	..	..	2	..	2	..	..	7	..	..	2	..	..	1	..	..	..	..	..	2	..	58	..	3	..	..	58	45	103	84
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	..	51	1	52	85
128	231	312	144	125	150	19	102	6	18	300	24	1,091	147	43	398	123	73	572	24	97	39	221	359	53	23	119	107	75	173	16	93	8	92	5,498	2,516	8,014	
..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	58	..	58	2	60	86
..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	54	5	54	6	60	87
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	61	7	61	7	68	88
..	1	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	47	6	47	14	61	89
..	1	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52	..	52	4	56	90
..	1	..	..	..	..	..	..	..	..	2	..	4	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	7	48	20	68	91
..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	55	2	55	5	60	92
..	..	1	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	130	..	130	4	134	93
..	4	1	..	..	..	1	..	..	..	4	..	10	..	..	3	..	..	2	..	..	..	..	..	..	2	..	3	..	2	1	..	58	11	58	58	116	94
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	121	1	121	3	124	95
..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	134	..	134	7	141	96
..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	32	3	32	4	36	97
..	10	4	..	..	..	1	..	..	..	6	..	29	..	..	4	..	..	3	3	..	..	..	..	..	2	..	3	..	2	1	..	850	42	850	134	984	
128	241	316	144	125	150	20	102	6	18	306	24	1,120	147	43	402	123	73	575	27	97	39	221	359	53	25	149	110	75	175	17	93	858	134	6,348	2,650	8,998	
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	

list for last year, five changes in schools appear, two institutions having disappeared from the list, with three others added. Whether these represent changes in policies of geographical restrictions in enrollment, or are merely fortuitous, is not susceptible to positive answer on the basis of data submitted to this Council. An additional 18 schools, all publicly owned, have less than 10% of the entering class from outside the state. On the basis of statements from medical schools to the Association of American Medical Colleges regarding admission requirements,[13] 10 of the 12 schools having no out-of-state students in the 1956-1957 first-year class have absolute restrictions against such admissions. The other two have partial restrictions, giving first consideration and preference to applicants resident in the state in which the school is located. According to this source, of all 85 approved or developing schools in the United States, only 10 have absolute restriction of admission to applicants in the state in which the school is located, though 36 have partial restrictions. This may be in the form of giving first consideration and preference to applicants having home-state residence, or it may be a restriction of out-of-state enrollments to a fixed maximum proportion of the entering class, varying from 10 to 30%. Though five schools provide no specific statement regarding geographical restrictions on admissions, 34 schools have no such restrictions. All but one of these 34 schools are privately owned. However, three privately owned schools have partial geographical restrictions and one has an absolute restriction against admission of out-of-state residents.

Table 28.—*Ratio of Freshman Students to State Populations, 1956-1957*

Numbers of Students per 100,000 population* in the Approved and Newly Developing Medical and Basic Science Schools of the United States	
Maine†	2.3
Nevada†	2.5
Rhode Island†	3.0
California	3.0
Montana†	3.0
New Mexico†	3.0
New Hampshire	3.2
Delaware†	3.3
North Carolina	3.4
Missouri	3.6
Idaho†	3.7
West Virginia	3.8
Alabama	4.0
Texas	4.1
Washington	4.1
Arizona	4.2
Georgia	4.2
Michigan	4.2
South Carolina	4.2
Indiana	4.3
Oregon	4.3
Virginia	4.3
Minnesota	4.4
Kentucky	4.4
Ohio	4.4
Illinois	4.6
Wisconsin	4.6
Connecticut	4.7
Maryland	4.7
Massachusetts	4.8
Kansas	4.9
Iowa	5.0
Pennsylvania	5.2
Wyoming†	5.2
Colorado	5.3
Louisiana	5.5
Florida	5.6
New Jersey	5.6
Oklahoma	5.6
District of Columbia	5.8
Mississippi	5.9
Arkansas	6.2
Vermont	6.2
Tennessee	6.4
North Dakota	6.6
Utah	6.6
New York	6.8
Nebraska	7.3
United States	4.7

* Estimated July 1, 1956, total population excluding members of the Armed Forces stationed in each area. Current Population Reports, Series P-25, No. 148, Nov. 18, 1956.

† States with no medical school.

Table 26 shows that 92 United States residents are enrolled in the first-year classes of Canadian medical schools, compared with 78 in the previous year, with 8 Canadians enrolled in the first-year classes of United States schools. The United States is thus the recipient of a favorable balance that represents an educational opportunity equivalent to another American medical school having as large an entering class as the present median of 84.

Table 29.—*Comparative Analysis of College Records of First-year Medical Students, 1950-1957*

College Grade Average First-year Medical Students	1950-1951	1951-1952	1952-1953	1953-1954	1954-1955	1955-1956	1956-1957
3.6—4.0(A)	40	30	18.0	21.1	16.8	15.8	16.1
2.6—3.5(B)	43	55	67.5	68.9	69.0	70.6	69.9
1.0—2.5(C)	17	15	14.5	10.0	14.2	13.6	11.0

United States first-year medical students in Canada come from 17 states, with New York (29), Massachusetts (10), and Connecticut (8) accounting for 51% of such students. All but one of the Canadian schools have one or more United States students, with McGill University having 47 in the first medical year.

COLLEGE RECORD OF FIRST-YEAR MEDICAL CLASS

Table 29 presents a comparative analysis of the premedical collegiate scholastic record of the entering class in medicine each year since 1950-1951. There appears to be no significant change in the 1956-1957 year compared with the two preceding years. The most significant change in this three-year period compared with the 1950-1951 and succeeding year is in the proportion of students admitted to medical school with a "B" college grade average compared to those admitted with an "A" college grade average. For the past five years, more than two-thirds of the entering class have had "B" college grade averages, while only one-fifth to one-sixth of the entering medical classes have had an "A" college record.

Though medical school admissions committees *recognize the differences among colleges in the* relationship of a given grade average to scholastic achievement, this should be pointed out to others who might consult table 29. For instance, scholastic achievement in one college that is awarded a "B" grade might in another college be given a "C" grade, and, similarly, though to a lesser degree, in the case of "A" compared to "B" grades. It is probable that table 29 is of significance only as indicating an over-all trend.

Table 30.—*Premedical Education of First-year Students in the United States, 1956-1957*

	No. of First Year	3 Yr. College Education	4 Yr. College Education	No. Holding Degrees	% with Degrees
Medical College of Alabama..	81	17	64	64	79.0
University of Arkansas	100	35	65	54	54.0
College of Medical Evangelists	98	0	98	98	100.0
University of Southern California	68	13	55	44	64.7
Stanford University	62	20	42	41	66.1
University of California, Los Angeles	50	6	44	44	88.0
University of California, San Francisco	78	32	46	46	59.0
University of Colorado	84	34	50	40	47.6
Yale University	80	7	73	71	88.7
Georgetown University	114	6	108	108	94 7
George Washington University	102	40	62	62	60 8
Howard University	78	0	78	78	100.0
University of Miami	71	29	42	33	46.5
University of Florida	47	0	47	45	95.7
Emory University	74	19	55	55	74.3
Medical College of Georgia...	102	17	85	79	77.5
Chicago Medical School	74	0	74	74	100.0
Northwestern University	133	41	92	92	69.2
Stritch School of Medicine....	88	45	43	37	42.0
University of Chicago	72	12	60	50	69.4
University of Illinois	191	112	79	72	37.7
Indiana University	159	76	83	74	46.5
State University of Iowa	122	72	50	41	33.6
University of Kansas	104	1	103	101	97.1
University of Louisville	104	13	91	91	87.5
Louisiana State University ..	125	55	70	64	51.2
Tulane University	134	35	99	64	47.8
Johns Hopkins University ...	78	0	78	78	100.0
University of Maryland	93	22	71	70	75.3
Boston University	76	1	75	75	98.7
Harvard Medical School	115	3	112	110	95.7
Tufts College Medical School.	112	4	108	108	96.4
University of Michigan	202	92	110	75	37.1
Wayne University	77	31	46	46	59.7
University of Minnesota	130	67	63	56	43.1
University of Mississippi	76	24	52	44	57.9
St. Louis University	123	19	104	89	72.4
University of Missouri	75	25	50	47	62.7
Washington University	86	11	75	70	81.4
Creighton University	76	39	37	37	48.7
University of Nebraska	87	37	50	46	52.9
Dartmouth Medical College ..	24	21	3	3	12.5
Seton Hall University	80	2	78	78	97.5
Albany Medical College	68	0	68	68	100.0
State University of New York, New York	155	8	147	145	93.5
State University of New York, Syracuse	79	10	69	69	87.3
University of Buffalo	84	7	77	70	83.3
Albert Einstein College of Medicine	96	1	95	95	99.0
Columbia University	120	0	120	120	100.0
Cornell University	84	4	80	80	95.2
New York Medical College ...	128	3	125	125	97.7
New York University	136	3	133	129	94.9
University of Rochester	71	4	67	66	85.9
University of North Carolina	67	22	45	44	65.7
Duke University	78*	16	61	54	69.2
Bowman-Gray School of Medicine	54	7	47	47	87.0
University of North Dakota..	41	18	23	23	56.1
University of Cincinnati	94*	3	90	83	88.3
Western Reserve University ..	91	0	91	90	98.9
Ohio State University	150	20	130	130	86.7
University of Oklahoma	101	53	48	48	47.5
University of Oregon	76	23	53	46	60.5
Hahnemann, Philadelphia ...	108	3	105	105	97.2
Jefferson Medical College	180	3	177	175	97.2
Temple University	137	5	132	132	96.4
University of Pennsylvania ..	126	3	123	123	97.6
Woman's Medical	50	3	47	47	94.0
University of Pittsburgh	100	6	94	95	95.0
Medical College of South Carolina	80	12	68	64	80.0
University of South Dakota..	41	14	27	26	63.4
University of Tennessee	225	99	126	64	28.4
Meharry Medical College	74	8	66	66	89.2
Vanderbilt University	54	21	33	33	61.1
Southwestern Medical School.	106	38	68	60	56.6
University of Texas	164	34	130	118	72.0
Baylor University	82	9	73	71	86.6
University of Utah	54	34	20	15	27.8
University of Vermont	50	7	43	42	84.0
University of Virginia	76	7	69	69	90.8
Medical College of Virginia..	84	18	66	64	76.2
University of Washington ...	76	25	51	51	67.1
West Virginia University	31	6	25	24	77.4
University of Wisconsin	83	58	25	25	30.1
Marquette University	103	43	60	52	50.5
University of Puerto Rico ...	52	7	45	42	80.8
Totals	8,014	1,800	6,212	5,849	73.0

* One student admitted with less than 3 yr. premedical education.

The Fourth Teaching Institute of the Association of American Medical Colleges in November, 1956, had as the subject Appraisal of Applicants to Medical Schools. The data presented then and the discussions by representatives of admissions committees made it abundantly clear that the college scholastic record is just one factor among many considered in the selection of medical students as has been indicated in the résumé referring to that Institute in the section on Matters of General Interest to Medical Education.

PREPROFESSIONAL REQUIREMENTS FOR AND ATTAINMENTS OF THE ENTERING CLASS

Comparing table 3 in this report with a similar table in the 1954-1955 education number of The Journal, there appears to be a marked shift by five medical schools toward requiring longer college preparation before admission to medical school, though two other schools (Pennsylvania and Vermont) have dropped their requirements from four to three years of college preparation. Though only one school stipulated a degree as an admission requirement in 1954-1955, seven medical schools so stipulate now (Einstein, Georgetown, Hahnemann, Johns Hopkins, Kansas, New York Medical College, Vanderbilt). However, inspection of table 30 reveals considerable discrepancy between requirements stipulated by the medical schools and the actual attainments of the students. Of the seven medical schools requiring degrees, only one (Johns Hopkins) has 100% of entering students with degrees, though five of the degree-requiring schools have more than 95% of the entering class consisting of students having degrees. An additional six schools have in their entering medical classes solely students with degrees.

TABLE 31.—*Comparison of Admission Requirements, 1954-1955 with 1956-1957*

Stated Admission Requirement	No. of Schools 1954-1955	 1956-1957
Less than 3 yr. college	1	1
3 yr. college	71	73
4 yr. college	8	4
Degree	1	7
	81	85

Simply to provide useful comparisons between the current year and two years ago rather than to emphasize unduly the trend toward a longer college preparation required for admission to medical schools, tables 31 and 32 have been prepared. Table 31 shows the changes in the requirements stipulated by the medical schools. Table 32 indicates the increasing proportion of medical schools admitting as classes students predominantly holding degrees. It should be noted that the one school stipulating two years of college as a minimum requirement has reported taking no students with less than three years of college during at least the past three years.

As previously mentioned, two schools have lessened the number of years of college preparation required, while 73 medical schools state that they require three years of college before admission. However, one of these 73 schools has as an entering class entirely students with college degrees.

Statements regarding actual minimal preprofessional collegiate requirements for admission are presented in the brochure on "Admission Requirements of American Medical Colleges, 1957-1958" prepared by the Association of American Medical Colleges. The current trend toward lengthening this requirement, at the same time that the duration of graduate medical education is being increased, should be a source of concern and thoughtful study by medical educators as well as by the profession as a whole.

TABLE 32.—*Comparison of 1954-1955 and Current Year of Proportions of Medical Schools Having Entering Classes Consisting Predominantly of Students with College Degrees*

	1954-1955 No. of Schools, %	1956-1957
	(81)	(85)
100% entering students have degrees	4.9	7.0
More than 95% entering students have degrees	13.5	16.4
More than 90% entering students have degrees	8.6	7.0
More than 85% entering students have degrees	6.2	11.7
	33.2	41.4

ATTRITION OF MEDICAL STUDENTS

For the third successive year, data have been obtained from the American medical schools on student attrition. It will be possible in the annual report next year, when data are available for the 1957-1958 academic year, to show losses for a single class followed through the four years that class is in medical school. In each succeeding year, an additional class can be so considered. It should be noted here that, although student attrition was considered in the 1953-1954 annual report, it was on the basis of data for the 1952-1953 academic year. Since the 1954-1955 report on attrition used data obtained for that year, the 1953-1954 data were omitted, making the present report only the third continuous year.

Table 33 depicts by class and cause the students lost to medicine during 1956-1957. Comparison of these figures with the previous year reveals relative constancy in the losses in each class and in the relation of the total losses to the total enrollments in the two years. It is encouraging to note that the proportion of students withdrawing in good standing in the third and fourth years is lower this year than it was last year, indicating that previous higher ratios were either fortuitous or that the reasons for good students withdrawing are disappearing.

TABLE 33.—*Attrition in the Approved Medical Schools in the United States, 1956-1957*

Yr.	Enrollment	Failed	Withdrew, Poor Standing	Withdrew, Good Standing	Totals	% of Enrollment Lost
First	8,014	276	92	176	544	6.8
Second	7,259	110	14	70	194	2.7
Third	7,023	49	14	25	88	1.1
Fourth	6,834	11	5	14	30	0.3
Totals	29,130	446	125	285	856	

This year, as was also the case in the previous two years, about two-thirds of all losses were in the first-year class. The current data for 1956-1957 show that 67.6% of these losses were due to failure or withdrawal in poor academic standing. This is identical with the 67.6% for the first-year class in 1955-1956. The second-year class in 1956-1957 had 64% of their losses from this cause, compared to 62% for the 1955-1956 second-year class. In the current third-year and fourth-year classes, 67% of the student losses occurred because of failure or withdrawal in poor academic standing, compared with 55% for the third-year and fourth-year classes a year ago. It is hoped that the decrease in the proportion of students in good standing withdrawing in the third and fourth years that was first noted last year and is continuing this year is a significant trend. The proportions for such losses were 44.9% in 1955-1956 and 33.1% in the 1956-1957 year.

Table 34 shows for the past three years, by type of school ownership, data regarding enrollments, applications, and attrition due to unsatisfactory scholarship by the first-year classes. In the annual report for 1954-1955, a question was raised regarding a possible relationship between the higher attrition rate for poor scholarship in the publicly owned schools with their lower number of applications possibly on the basis of geographical restrictions. As table 34 indicates, there appeared in the following year to be no significant difference in the attrition rate between publicly owned and privately owned schools. The data for the current year again raise the question regarding such a relationship. As was noted in the section on the geographical source of entering students, and as table 27 illustrates in the figures for out-of-state students, it is chiefly publicly owned schools that exercise geographical limitations in admitting students into medical school. Application of the chi-square test to the deviations in the proportion of attrition by type of school ownership indicates that the opportunity of this occurring solely by chance was less than one in a thousand for 1954-1955 ($P<0.001$), was about one in five for 1955-1956 ($P>0.20$), and was about one in 25 in 1956-1957 ($P<0.05$ and >0.025). Though the level of significance varies considerably in the three years, it appears to justify careful thought and continued close observation. It is likely that the data in succeeding years will reveal whether or not there is a significant correlation between geographically restrictive admissions policies resulting in fewer applications and a higher incidence of attrition from unsatisfactory scholastic achievement.

TABLE 34.—*First-year Enrollments, Applications, and Attrition with Poor Scholarship by Type of School Ownership*

	1954-1955		1955-1956		1956-1957	
	Publicly Owned	Privately Owned	Publicly Owned	Privately Owned	Publicly Owned	Privately Owned
No. of schools	39	41	39	43	40*	45*
Percentage of enrollment	50	50	49	51	48	52
Percentage of enrollment from out of state	9	53	5	31	4	27
Percentage of failures and withdrawals in poor academic standing	70	30	56	44	60	40
Percentage of applications	26	74	19	81	27	73

* Includes the three newly developing schools not yet eligible for approval.

GRADUATES

As was anticipated last year, the graduates of medical schools in the United States were fewer this year. The graduating class has decreased slightly each year since 1954-1955 (table 24). Two schools had graduates for the first time in 1956-1957, the University of Mississippi and the University of Missouri, totaling 45. More than offsetting these gains were losses in the size of graduating classes of 40 schools, of which 8 each had at least 10 fewer graduates this year. A total of seven medical schools had 11 or more additional graduates in 1956-1957 compared with the previous year.

In 1957, three medical schools (Jefferson, Michigan, and Tennessee) each graduated more than 150 students, as compared with six such medical schools a year ago. Eight medical schools (Harvard, Illinois, New York University, Northwestern, Ohio State, Pennsylvania, State University of New York at New York City, and Texas at Galveston) each had graduating classes larger than 125, compared with five such schools in 1956. The 11 medical schools having graduating classes larger than 125, including the largest, had a total of 95 fewer graduates in 1957 than the same schools had in 1956. Of the 11 schools named above, only the University of Pennsylvania had a larger graduating class this year than last year. The smaller total number of graduates occurred because of a smaller third-year class in 1955-1956. The explanation is not available for the smaller size of that class as compared with the two preceding years and with the steady rise in sizes of entering classes. Possibly a slightly larger attrition occurred in the first year of that class (1953-1954), though that is the year for which national figures on attrition are not known.

Considering that the 1956-1957 third-year class is the largest to date, it is anticipated that the number of medical school graduates in 1958 will be larger than in either this year or last year. It is unlikely that it will exceed the 6,977 graduates in 1955 because that year still included as graduates the 50 students completing the intern year required by Stanford University. The greatly augmented second-year class size of the University of Mississippi will affect the 1959 graduating class, as will for the first time graduates of Albert Einstein. It is expected that the 1959 graduating class, rather than 1958 graduates, will set a new record high. This will probably be exceeded in 1960 in view of the present entering class size and the appearance then for the first time of graduates from two other newly developing four-year medical schools, the University of Florida and Seton Hall.

THE NEXT ENTERING CLASS

Based on estimates submitted from the medical schools regarding the size of the 1957-1958 entering class, it will total about the same as the 1956-1957 class. A total of 36 medical schools expected slightly smaller classes, 28 anticipated no change, and 16 looked forward to larger entering classes. Since no additional schools will be taking classes for the first time in 1957-1958, the over-all prospect is for no significant increase in the total entering class, and possibly a slight decrease.

Although, as table 35 indicates, applications totaled 59,798, the number of individual applicants for the 1956-1957 entering class was 15,918. Since this is a larger figure than that obtained a year ago, it appears that the trend toward fewer applicants evidenced until last year definitely has been reversed, permitting medical schools to fill all available openings with qualified applicants.

STUDENT FEES

Fees for resident and nonresident students charged by each medical school are listed in table 3. During the 1956-1957 academic year, the average tuition fee in American schools for resident students was $720 and for nonresident students was $918. Comparable figures for last year were $684 and $857, and for the 1954-1955 year fees were $646 and $807 for resident students and nonresident students respectively.

INTERNATIONAL EXCHANGE OF STUDENTS

The June, 1957, annual issue of "Open Doors"[22] prepared by the Institute of International Education presents a valuable and detailed report on the international exchange of students, faculty members, and physicians. It is of general interest to note that during the academic year 1956-1957 there were 40,666 foreign students in the United States coming from 136 nations and political areas of the world. Of these, 31.8% were from the Far East, 22.4% from Latin America, 14.7% from Europe, 13.4% from North America, 12.9% from the Near and Middle East, and somewhat less than 5% from Africa and Oceania. There were also 1,153 foreign teachers and researchers who had received appointments to American faculties and 6,741 foreign physicians in American hospitals. During this same period, 1,492 faculty members from United States institutions were engaged in teaching or research projects abroad. Complete statistics for American students studying abroad were not available for 1956-1957, but the records for 1955-1956 indicated that 9,887 Americans studied abroad during that academic year. Of this group 2,056 (including 293 in Canada) were engaged in study of medicine.

TABLE 35.—*Number of Applicants to Medical Schools, 1948-1957*[*]

Yr.	No. of Individual Applicants
1948-1949	24,242
1949-1950	24,431
1950-1951	22,279
1951-1952	19,920
1952-1953	16,763
1953-1954	14,678
1954-1955	14,538
1955-1956	14,937
1956-1957	15,918

[*] Gee, H. H.: Study of Applicants 1955-56, J. Med. Educ. 31:863 (Dec.) 1956. Current year from Dr. Helen Gee, Association of American Medical Colleges.

The largest number of foreign students were engaged in study of some phase of engineering (9,057); the next largest group in the humanities (8,524); the third largest group in social sciences (5,859); the fourth largest number in natural and physical sciences (5,372); with the fifth largest number in the field of medical science (3,854). About half of this latter group represented foreign students listed as undergraduate and the remainder as graduate or special students. Business administration (3,485), education (1,982), and agriculture (1,469) represented the next largest groups of foreign students areas of study in this country.

American students abroad were studying in the fields of agriculture, architecture, business administration, creative arts, education, engineering, humanities, language and literature, medicine (2,056), natural and physical science, social science, and theology. Of those Americans abroad studying medicine, 6 were in medical schools in the Far East, 10 in the Near and Middle East, 1,592 in Europe, 142 in Latin America, 121 in Mexico, 293 in Canada, 2 in Africa, and 11 in Oceania. The two European countries harboring the greatest number of American students in medicine were Switzerland (669) and Italy (319); with Netherlands (174), United Kingdom (120), and Belgium (104) following in order. Smaller numbers of American students, in the order listed, were studying in Germany, Spain, Ireland, Austria, France, Denmark, and Sweden.

FOREIGN STUDENTS STUDYING MEDICINE IN THE UNITED STATES

In 1956-1957 there were 100 foreign students including 8 Canadian citizens enrolled in the entering classes of United States medical schools. Eighty-three of these were in 28 privately owned schools and 17 were in publicly owned schools.

Further study of the data in last year's annual report (table 27) dealing with foreign citizens enrolled in United States schools makes it apparent that citizens of United States territories and possessions were reported by medical schools in the foreign category. As a result, the figures published in that table were in error. In 1955-1956, there were 102 foreign citizens (including 5 Canadians) enrolled in the entering class rather than the 130 reported. In the 1954-1955 entering class there were 98 (including 4 Canadians) rather than the 104 reported.

In terms of numbers of students involved, the greatest contribution by American medicine to the medical education of foreign physicians continues to be at the graduate level. The statistics in "Open Doors"[22] indicate that in 1956-1957, 6,741 physicians from 88 countries trained in American hospitals. Of these, 4,753 held residencies and 1,988 were training as interns. This represented an increase of 703 physicians over the 6,033 reported for the previous year. Over one-third of these physicians were from the Far East, with the largest group from the Philippines (1,332). The other leading nationality groups of foreign physicians in the United States and the number from each country were Canada (576), Mexico (556), Turkey (427), Germany (324), Greece (305), Korea (296), Japan (253), Italy (242), India (203), Iran (183), Cuba (180), and China (153). Women physicians totaled 908 or 13.5% of the foreign interns and residents, with the Far East and the Philippines accounting for over one-half of them.

Foreign physicians had appointments on the staffs of hospitals in 44 states, the District of Columbia, Hawaii, and Puerto Rico with three-fourths of them located in 10 states (one-quarter in New York and one-half in the states of Ohio, Illinois, Massachusetts, Pennsylvania, New Jersey, Missouri, Maryland, Michigan, and Texas). The 10 hospitals with the largest number of foreign physicians include Bellevue Hospital Medical Center, New York City (114), Boston City Hospital (75), Jersey City Medical Center (75), Henry Ford Hospital, Detroit (66), Kings County Hospital Center, Brooklyn (56), Cleveland Clinic Hospital (51), Michael Reese Hospital, Chicago (49), Memorial Center, New York City (46), Baltimore City Hospital (44), and Goldwater Memorial Hospital, New York City (42).

AMERICAN STUDENTS STUDYING MEDICINE ABROAD

A survey by the Institute of International Education indicated that in 1954-1955 there were 1,386 United States citizens enrolled in medical schools outside the United States and Canada. This year's report[22] covering 1955-1956, indicates an increase from 1,386 to 1,863 such students. As noted previously, the vast majority of these are in medical schools in Europe, particularly those in Switzerland, Italy, Netherlands, the United Kingdom, and Belgium.

During the two academic years concerned the ratio of applicants to admissions in United States medical schools was approximately 2:1. In view of this low ratio, it appears likely that many and possibly most of the American students who are now studying medicine abroad were not considered qualified for such study in United States schools. If this is in fact the case, the large number involved and even more significantly the increase of almost 500 students in one year, should be a matter of serious concern.

Information available regarding United States medical licensure of American-born graduates of foreign medical schools indicates that the full impact of these large numbers of American citizens studying medicine abroad is not evident at the present time. Table 36 presents the numbers of initial United States licenses issued to such physicians. Although it appears superficially that there has been an increase in this year over last year, this is probably not the case. In previous years, this information was not available from Pennsylvania and New York. The medical examining boards in both states have collected such data for this year and though Pennsylvania issued no licenses to American-born graduates of foreign schools, New York issued 50. On the apparently reasonable assumption that, in the other years presented in table 36, New York issued a somewhat similar number of such licenses, the data for this year would point to a real decrease rather than an apparent increase.

The reports of the surveys of the Institute of International Education, however, would justify the belief that in the future there will be an increasing number of United States citizens returning from medical practice after a medical education acquired abroad.

THE EDUCATIONAL COUNCIL FOR FOREIGN MEDICAL GRADUATES

The problems centering about evaluation of the medical qualifications of the foreign-trained physician seeking further education or licensure in the United States were explored to some extent in the 1955-1956 report. At that time the program proposed by the Cooperating Committee for Foreign Medical Graduates was also presented. In May, 1956, the Educational Council for Foreign Medical Graduates was formed to implement the program. Difficulty in obtaining the necessary tentative declaration of tax exemption status resulted in unanticipated delay. This was recently resolved and the Educational Council has received $100,000 each from the W. K. Kellogg Foundation and the Rockefeller Foundation as initial support for its program. Dr. Dean F. Smiley, former Secretary of the Association of American Medical Colleges, has been appointed as director of this new organization. It is expected that recruitment of other staff personnel, acquisition of office space and equipment will be completed, and final detailed planning for putting the new program in operation will be accomplished within the next few months.

TABLE 36.—*Initial United States Licenses Issued to American Graduates of Foreign Medical Schools (Excluding Canada)*

Year(s)	No. of Licenses Issued	No. of Licensing States
1950-1954	99	20
1955	89	19
1956*	103	15

* Includes number of licenses issued by New York (50) and Pennsylvania (0) which were not available in other years.

POSTGRADUATE MEDICAL EDUCATION

As a part of the increasing activities of the Council on Medical Education and Hospitals regarding continuation medical education for physicians, a "Guide Regarding Objectives and Basic Principles of Postgraduate Medical Education Programs" was published this year following its approval by the House of Delegates of the American Medical Association. This guide was sent to all medical schools in the United States, to all hospitals having approved internships and/or residencies, and to the other institutions and organizations active in this field. Copies are available on request to the Council office. Another activity is the collection of information about postgraduate courses for physicians, for the purposes of publishing an annual directory of such courses.[23]

Every effort has been made to distinguish postgraduate courses for physicians from such other activities as conventions, assemblies, and society meetings. The latter have not been included either in the current list or in the analysis of postgraduate courses during the past year in order that more basic data could emerge that would have greater usefulness than would publication and analysis of extremely disparate activities.

Table 37.—*Postgraduate Courses by Category and Type of Practice for Whom Designed*

Course	Total No. of Courses Given	Designed for GP's and Part-time Specialists	Designed for Full-time Specialists	Designed for Both
Continuous short course 4 days or less	275	169	51	64
Continuous short course 5 days or more	336	224	88	13
Intermittent short course 4 days or less	36	28	7	3
Intermittent short course 5 days or more	283	198	70	12
Medical traineeship	21	13	5	2
Circuit course	87	65	1	21
Home study and other	16	6	5	5
Totals	1,054*	703	227	120

* This is the total number of courses reported in time for IBM analysis. Later reports increased the total to 1,079.

The study of postgraduate courses for the entire calendar year Sept. 1, 1956, to Aug. 31, 1957, was attempted this year, recognizing that enrollment data would necessarily be incomplete for the final two months (July and August). Several other steps were taken in order to secure basically realistic data. Enrollment cards on the courses were sent out to the sponsors bi-monthly for the courses held or initiated in that period. Multiple requests were sent in an effort to accumulate as complete information as possible in the case of repeated courses. These cards provided separate spaces for intern and resident enrollments, as well as for the number of practicing physicians, in order that the reports would be more meaningful in terms of postgraduate medical education. Since interns and residents are generally considered as graduate students, rather than postgraduate, they were not included in the present study. In addition, information was requested on the geographical location of the enrolled physicians' homes. This latter information, which provided a large amount of unique data, will be the subject of a later report on postgraduate medical education service areas.

The totals and tabular information result from the IBM analysis of punched cards prepared by the Machine Records Division of the American Medical Association from the edited postgraduate course forms and enrollment data submitted by the sponsors of the courses. The information collected in the past year and analyzed in this report will serve as realistic basic data for future comparisons.

On the basis of information reported to the Council, there was a total of 1,079 postgraduate courses or course offerings. Total enrollment is available for 1,007 of these, for which there were 34,913 physician registrations. However, in the following data, the analysis is based on 1,054 courses (or course offerings) because only this information was received early enough to permit IBM card punching. Of these 1,054 courses, enrollment data were available for only 985.

At the outset it should be understood that physician enrollments cannot be equated with individual physicians because an unknown number of physicians may have enrolled in more than one course during the year. Apart from this caution regarding interpretation, the numbers do represent physicians in practice or in military service.

Table 37 shows the numbers of courses given and whether they were designed for physicians in general or part-time specialty practice, for full-time specialists, or for both. It is especially interesting, in view of repeated statements to the contrary, to note the predominance of courses reportedly designed for physicians in general practice and in part-time specialty practice. These make up two-thirds of the total. If the 120 courses designed for physicians in both types of practice are added to the 720 courses specifically designed for the general practitioner, then such courses comprise more than three-fourths of the total.

It is not possible to compare the present numbers of courses, for whom they are designed, or enrollments with the previous year because the 1955-1956 period was based on a 9-month year, while the current study covers a 12-month year. It is possible to compare proportions, as shown in table 38.

There has been a large increase in the past year in the proportion of postgraduate courses specifically planned for the physician in general and in part-time specialty practice at the expense of courses reportedly designed for both full-time specialists and for general practitioners. Taking into consideration the fact that the previous year's courses were analyzed for a 9-month period and those of the last year for a 12-month period, as well as other factors, the above table represents a genuinely significant change. This would appear to be a desirable trend from the standpoint of the medical

Table 38.—*Change in Reported Proportion of Postgraduate Courses Designed for Physicians in General Practice*

Courses During	Designed for GP's, %	Designed for Full-time Specialists, %	Designed for Both, %
Sept. 1, 1955-May 30, 1956	23.9	16.8	59.2
Sept. 1, 1956-Aug. 31, 1957	68.3	20.4	11.3

educators who have questioned whether a single educational program can most effectively serve the interests of the two groups of physicians.

Table 39 shows the enrollments in the various kinds of postgraduate courses by physicians in general and in full-time specialty practice. The numbers of courses on which the enrollments are based should be noted, as these numbers may be smaller than those in the preceding table due to incomplete reporting at the time the analysis was initiated. An interesting point illustrated by this table is that only 60% of the reported enrollments are by physicians in general or part-time specialty practice, although more than three-fourths of all courses were designed exclusively or in part for the general practitioner.

Table 39.—*Postgraduate Courses by Category and Enrollments*

Course	No. of Courses with Enrollment Data	Enrollments by Full-time General and Part-time Specialty Practitioners	Enrollments by Full-time Specialists	Total Enrollments
Continuous short course 4 days or less	260	6,445	4,381	12,862
Continuous short course 5 days or more	293	2,504	2,956	6,727
Intermittent short course 4 days or less	36	792	55	881
Intermittent short course 5 days or more	271	2,689	1,118	4,629
Medical traineeship	20	98	56	164
Circuit course	86	3,340	1,713	5,586
Home study and other	16	437	375	3,096
Totals	982*	16,305	10,654	33,945†

* Although eventually 1,007 courses provided enrollment data, only 982 gave this data early enough for IBM analysis.

† The total enrollment figure exceeds the sum of the other enrollment figures because some forms gave no breakdown of the totals reported.

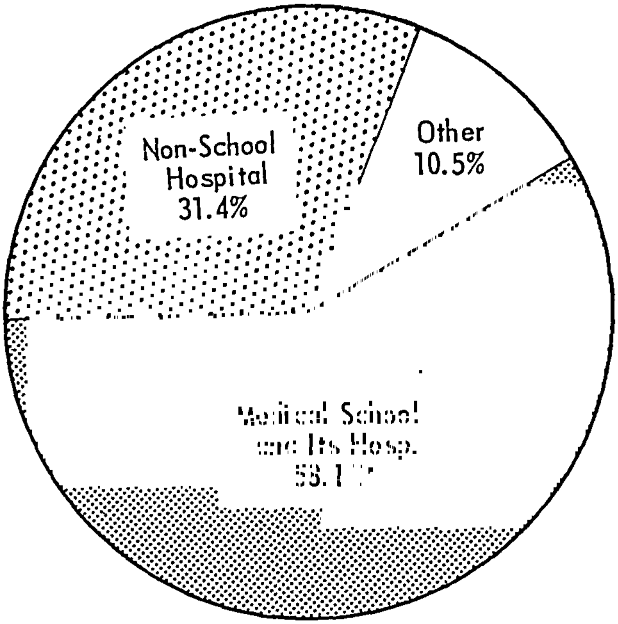
Although the enrollment by type of practice is 6,986 less than the total enrollment analyzed, the proportions of type of practice, hand-counted, for the 968 enrollments reported late did not vary from the above by more than 0.1%, suggesting that these are representative data.

Table 40.—*Ranking States Having Largest Enrollments in Postgraduate Courses Compared with Total United States Enrollment and Physician Population of States*

State	Physician Enrollment	% of Total U. S. Enrollment	% of State Physician Population
N. Y.	6,859	22.0	22.0
Calif.	6,660	19.8	31.9
Ill.	3,404	10.0	27.1
Minn.	2,153	6.3	48.3
Kan.	2,120	6.2	94.0
Ohio	1,313	3.8	12.0
Texas	1,244	3.6	14.2
Pa.	1,176	3.4	7.9
Total	24,929	75.1	

In addition to the total of 1,079 courses given (of which 1,054 were analyzed), 341 scheduled courses or course offerings were cancelled or were not given for lack of physician enrollments. Six institutions, of which three are in New York City, account for half (49%) of the cancelled courses. A total of 26 institutions or organizations each reported cancelling three or more courses last year. These included 12 medical schools, 3 university-affiliated postgraduate medical schools, 2 nonuniversity affiliated postgraduate medical schools, one medical society joint committee, 5 hospitals, 3 government institutions, and one foundation. The data submitted regarding the cancelled courses are being saved for future study in order to determine if possible whether there are any discernible factors common among them that discouraged physician enrollments.

The location of the courses by percentages of total hours is shown in the pie graph (see figure). The Council's guide suggests that medical schools and other hospitals provide the best facilities for postgraduate medical education. This appears to be the viewpoint also of many individuals in medical schools and hospitals, since 89.1% of all courses occur in these locations. However, as later tables show, some of the courses occurring in medical schools and in hospitals are primarily sponsored by other groups. This will be discussed in more detail in connection with the methods of education employed.



Courses by location. Percentages refer to total hours of postgraduate courses.

Table 40 gives the physician enrollments and comparisons with total enrollments and physician populations in the ranking states. It might be assumed at first glance that this table shows 94% of Kansas physicians enrolled in postgraduate courses in Kansas. A more likely interpretation is that these courses also attract physicians from other states having fewer educational opportunities. It is precisely because of the regional implications, especially in this phase of medical education, that a more detailed geographical study than has heretofore been made is planned during the coming year, utilizing data accumulated during the past year.

Although institutions and organizations in New York state offered almost three times as many courses as did California and had more than twice the number of institutions and organizations active in postgraduate medical education, California had nearly the same enrollment of physicians as did New York. This demonstrated interest in continuing education by the California medical profession appears to arise from an effective relationship between the California Medical Association and the five medical schools in the state, all of which are active in this field. The directors or assistant deans for postgraduate medical education of the five schools are a part of the California Medical Association Committee on Postgraduate Activities, along with other representatives of the profession as well as an able chairman and staff. The standing committee provides a common meeting ground and the opportunity for cooperative planning between the profession in the state and the medical schools. All of the postgraduate courses in California are staffed by medical school faculty personnel, whether the courses occur on or off campus. Continuing mechanisms for cooperative relationships between the state medical society and the medical schools as exemplified in California and in Kansas help to increase the interest of the medical profession in the postgraduate programs, provide a means through which the needs and wishes of the profession for their continuing education can be expressed, and thus aid in bringing into most effective use the resources of the region. To this point, the "Guide Regarding Objectives and Basic Principles of Postgraduate Medical Education Programs" states, "Thoughtful planning (of the postgraduate program) also means that the content of courses and other programs should be based upon the demonstrated needs and wishes of the physicians of the region, as well as upon advances in medicine. The means of ascertaining the needs and wishes of physicians will vary. Of great assistance is a close and cordial liaison among medical societies, medical schools, and hospitals of the region."

TABLE 41.—*Enrollment*

Course Category	Total No. of Such Courses Reported	No. Supplying Enrollment Data	Median Enrollment	Range Minimum-Maximum	No. Supplying Data on Hours	Median Hours	Range Maximum-Minimum
Continuous short course 4 days or less	275	260	31	1—462	254	15	2—32
Continuous short course 5 days or more	336	293	10	1—210	325	60	8—1000+
Intermittent short course 4 days or less	37	36	8	1—180	27	8	4—28
Intermittent short course 5 days or more	283	271	9	1—200	279	20	6—261
Medical traineeship	21	20	4	1—50	8	Data Insufficient	Data Insufficient
Circuit course	87	86	33	12—2133	76	30	5—100
Home study and other	16	16	Not Applicable	2—571	12	Not Applicable	Data Not Comparable
Totals	1,054*	982†			981		

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* This is the total number of courses reported in time for IBM card punching. Later reports increased the number to 1,079.

† The number 982 represents the courses having enrollment data submitted in time for IBM analysis. Enrollments were eventually reported for 1,007 courses.

Table 41 represents an analysis of the median enrollments and the median hours for each category of postgraduate course. Medians rather than arithmetical means or averages were used as being more likely to show the central tendency without undue influence by extremes. The total ranges from minimum to maximum are also given to provide greater perspective for this information. Although many people think of postgraduate medical education as being usually en masse education, the size of the median course enrollments is notably small. The continuous short courses of four days or less (regardless of hours per day) and the circuit courses show median enrollments at least three times larger than those of the other categories. It should be mentioned that these two categories, although comprising only about one-third (34.4%) of all courses offered, had more than one-half (54.4%) of the total physician enrollments. However, the circuit courses offered a median of hours of instruction twice that of the continuous short course of four days or less.

The range in hours of instruction is exceptionally large in the category of continuous short courses of five days or more because it includes a few full-time courses of 9 months as well as a few continuous short courses of five days having only 1 3/5 hours a day scheduled. It might be desirable in the future to split this category into two. Elimination of the few extremes would not have altered the medians.

The other categories having large ranges from minimum to maximum hours were the circuit courses and the intermittent courses of five days or more. These categories, which are similar except for location of instruction, are used for courses having from one hour once a week for several weeks and for courses convening several hours a week for several months.

The reason for the small median enrollment in the medical traineeship type of course is that such enrollments are often restricted to a few physicians at a time. This is frequently a necessity to avoid diluting the educational value of the residency, since the traineeships are in conjunction with the residency educational program, using its ward rounds and conferences. It is encouraging to note that 21 such educational opportunities were reported in the past year. It is believed this is an increase over previous years, although no positive numerical comparison can be made because no such category was used in the years previous to 1956-1957. This kind of course is one of the newest, and on a less formal basis one of the oldest, forms of postgraduate medical education. As the term is now used, a medical traineeship may be defined as an individually arranged residency-type educational experience in a hospital approved for residency training in that field. It differs from the residency in being of shorter duration than a year because it is not intended to qualify the trainee for the practice of a specialty or for specialty board certification. It also differs in providing usually neither housing nor stipend and often exacting a fee from the trainee, as well as by not always involving such direct patient responsibility as does a residency. Usually a minimum of several weeks and a maximum of several months is set by the department chief for this educational opportunity. It is likely that many more such programs are available to physicians than are reported to this Council, possibly because of the desire of the department chairmen concerned to make such arrangements only with physicians in the region, whom they may interview before making a commitment. For instance, the medical school which originated the term "medical traineeship" and which regularly makes such arrangements with individual physicians does not report these courses officially to this Council. In order that the Council may better discharge its obligation of serving as a national source of information on postgraduate medical education, it is hoped that such reluctance to list medical traineeships will disappear as more physicians recognize that the list of courses cannot guarantee acceptance of a physician into any specific course listed. More sponsors of courses in all of the categories are restricting enrollments in the courses to definite maximums in order that the primarily participative methods of education may be used.

The educational methods employed are of particular interest in this field, as was pointed out in the annual report last year. They were a source of particular concern to the *Ad Hoc* Advisory Committee on Postgraduate Medical Education, because it was felt by the committee that an improvement in the methods of education used would provide a major means of improving the quality of postgraduate programs. In fact, one of the eight basic principles is stated in the Guide as follows:

> The EDUCATIONAL METHODS should include more than a series of lectures or panel discussions in which the physicians are primarily passive recipients. Methods requiring active participation include live clinics and bedside rounds, seminars, open question periods, laboratory work, and study of patients under supervision.

In order to increase the value of the annual list of postgraduate courses in the past two years, information on the educational methods employed has been solicited and included for each course and printed in the list.

For purposes of analysis, the methods employed may with one exception be divided into two groups: participative and nonparticipative. The methods stipulated on the postgraduate course questionnaire that may be grouped as primarily participative are as follows: live clinic, ward round, seminar, laboratory work in which enrollee performs procedures, and study of patients. The methods stipulated on the questionnaire that may be grouped as primarily nonparticipative are as follows: lecture, panel, motion picture, television, slides and models, and observation of procedures and surgery by the enrollees. These are labeled "passive" in the tables because a short term was needed. Whether or not a one-hour lecture is any more participative during that hour for having an open question period scheduled after the lecture is questionable, though the desirability of following any lecture with such a question period is obvious. Therefore, in table 42 in order to present the facts as clearly as possible, the number of courses using otherwise nonparticipative methods of education but having question periods is separated from those having solely nonparticipative methods without even question periods.

TABLE 42.—*Methods of Education in Postgraduate Courses*

Category	Total No. of Courses	No. with Data on Educational Methods	No. Using Solely Passive Methods*	% of Total in Category That Are Passive*	No. Using Solely Passive Methods*	% of Total Analyzed	Over-all % of Foregoing
Continuous short course 4 days or less	275	273	39	14.3	50	18.3	32.6
Continuous short course 5 days or more	336	334	24	7.2	12	3.6	10.8
Intermittent short course 4 days or less	36	35	6	17.1	4	11.5	28.6
Intermittent short course 5 days or more	283	282	72	25.5	24	8.5	34.0
Medical traineeship	21	19	0	0.0	0	0.0	0.0
Circuit course	87	87	7	8.0	44	50.6	58.6
Home study and others	16	14	1	Not Applicable	1	Not Applicable	Not Applicable
Totals	1,054	1,044	149	14.3	135	12.9	27.2

* The term passive course is a brief term to denote those courses employing as educational methods those in which the enrollees are primarily passive recipients i. e., lecture, panel, motion picture, television, slides and models, observation such as of surgery.

Of the 1,054 courses analyzed, 10 furnished no information on educational methods used. Of the 1,044 that did provide such information, 149, or 14.3%, used solely nonparticipative methods of education. If one adopted the position that a motion picture, panel, or lecture is in itself no more participative for the enrollees, though it is followed by an open question period, an additional 135 or 12.9% of the courses would be added, bringing the over-all total of such courses to 284, or 27.2% of the whole. However, if total of 53,500 hours of instruction are considered, the courses using solely nonparticipative methods comprised 4,189, or 7.8% of the total hours. The courses using nonparticipative methods plus open question periods comprise 2,677 hours, or 5% of the total, making up together 12.8% of the total hours.

TABLE 43.—*Location of Courses and Educational Methods*

Location of Course	Total Courses in Location	Total Course Hours	No. of Courses Using Solely Passive Methods of Education	% of Courses Using Such Methods	% of Course Hours
Medical school and its hospitals	621	31,094	87	14.0	7.5
Auditorium not part of hospital	22	1,008	6	27.2	7.2
Other hospitals	254	16,808	32	12.2	8.5
Clinic	21	590	2	9.5	7.4
Hotel	40	587	12	30.0	15.3
Home	8	208	Not applicable	Not applicable	Not applicable
Other	88	3,205	9	10.2	5.6
Totals	1,054	53,500	149*		

* An additional 10 course forms lacked data regarding educational methods.

The intermittent short course of five days or more appears a notorious category for having the largest proportion of the courses utilizing solely nonparticipative methods of education, chiefly the lecture without even open question periods. However, an explanation for this may be that most of the lecture courses on psychoanalysis and its history fall in this category.

More than half of the circuit courses appear to use either solely passive methods of education or these plus open question periods. This appears to be true also of one-third of the continuous courses of four days or less, and more than one-fourth of the intermittent courses of four days or less. As would be expected by its nature, each medical traineeship employed participative methods. In fact, the medical traineeship is designed to be the most participative educational opportunity in the whole field of postgraduate medical education.

When methods of education are correlated with location of the courses, table 43 emerges. As might be expected, courses not utilizing hospital facilities are chiefly responsible for use of strictly nonparticipative methods of education. Although it is true that 14% of courses located at medical schools use solely nonparticipative methods of education (without regard for those considered as participative only by virtue of having open question periods), a factor that helps explain this emerges when the methods of education are correlated with course sponsorship rather than simply with location. In only 6.7% of the courses sponsored by medical schools are solely nonparticipative methods employed—93.3% of the courses sponsored by medical schools utilized laboratory work, patient clinics, bedside rounds, seminars, or performing of the procedure by physicians enrolled, along with lectures, panels, audiovisual aids, and the other modalities. Although 621 courses were given in the medical schools, only 371 were primarily sponsored and reported by the schools. Similarly, although 254 courses were given in nonschool hospitals, only 123 were primarily reported and sponsored by the hospitals. It appears that the nature of the sponsorship influences the methods of education employed, as may be noted in table 44.

There has been a distinct improvement in the past year regarding the educational methods reportedly used. A year ago, for the course year 1955-1956, medical schools reported using participative methods in only 59% of the courses. This has risen to 93.3% in 1956-1957. In the previous year, hospitals employed participative methods in 84.7% of the courses and this has risen to 90.3% in the past year. Both general and specialty medical societies used one or more of the participative methods in three-fourths of their courses in the past year compared with only 22% in the previous year. However, it is possible that greater rigidity was exercised this year in excluding from analysis the society meetings, conventions, and assemblies, which change in base alone could greatly alter the proportionate educational methods used by medical societies. If conventions and other society meetings were included, as might have occasionally happened in the previous year, the proportion of programs using solely nonparticipative methods would rise sharply because of the problems inherent in program planning for groups of several hundred to several thousand physicians.

TABLE 44.—*Sponsorship and Educational Methods*

Sponsor	No. of Sponsors	Total No. of Courses	No. of Hours	No. of Courses Using Solely Passive Methods of Education	% of Total Courses	% of Hours
Medical school	46	371	14,093	62	6.7	0.96
University graduate and postgraduate schools	6	131	5,718	32	24.4	13.3
Nonuniversity graduate and postgraduate schools	2	145	18,385	4	2.7	0.53
General medical society	11	75	1,453	17	22.3	18.0
Specialty medical societies	25	35	993	10	33.3	36.4
Academies of general practice	2	38	1,058	2	5.2	1.3
Hospitals	39	123	5,546	12	9.7	4.8
Government (military, USPHS)	13	46	2,829	0	0.0	0.0
Others (e. g., heart association)	24	90	3,425	10	11.5	5.7
Totals	168	1,054	53,500	149*	14.1	

* An additional 10 course forms lacked data regarding educational methods.

The Council on Medical Education and Hospitals, its staff, and the Advisory Committee on Postgraduate Medical Education are entirely aware of the fact that methodology and course quality cannot be completely equated, nor is that the intension in the foregoing discussion of educational methods. It is certainly possible for a gifted speaker to present a well organized and stimulating lecture that is likely to arouse active mental participation in the listener. It is possible for bedside rounds and seminars to be dull indeed, with relatively little educational value. There is little to be gained simply by going through the motions of using certain methods without consideration of other pertinent factors. In addition to interested well-motivated students, any effective educational program requires enthusiastic leadership, capable teachers, careful advance planning, and suitable facilities. However, if these are present, they are usually best employed by using dynamic methods of education that enlist the participation of the student, whether he is an undergraduate medical student or a physician in graduate or postgraduate medical education. The postgraduate course questionnaires used in the present analysis do not provide information regarding the leadership, the teachers, the kind of advance planning, or the motivation of the students. They do provide some information about facilities, the sponsors, methods of education, subject matter, hours, and enrollments. These are the subjects of the current analysis.

Table 44 also shows the number of institutions and organizations actively sponsoring postgraduate courses. There is relatively little change compared with the previous year in the total of 168 compared with 171 reported last year. Two more medical schools have joined the roll. This does not completely represent the interest of medical schools, which was reported more fully last year on the basis of specific inquiry of them.[24] Additional school faculties express a distinct sense of responsibility for postgraduate medical education without having the resources to carry through with an active postgraduate program. The table does not fairly represent the interest of the medical societies, particularly of the academies of general practice, in postgraduate medical education because they often co-sponsor programs with hospitals and with medical schools. To avoid duplication in this report in the case of such co-sponsorship, the course was attributed to the hospital or the medical school rather than to the medical society.

Two subjects on which only one postgraduate course each was scheduled last year and subjects about which several inquiries were received in the Council offices were tropical medicine and geriatrics. There was doubtless much offered regarding the special problems of the ageing in some of the courses listed under general practice, gynecology, internal medicine, malignant disease, neurology, psychiatry, physical medicine and rehabilitation, and other fields. However, it was not possible to distinguish which of the many courses listed for other subjects dealt in part with the geriatric aspects of the field. It would be helpful to potential enrollees in the future if courses having substantial focus on the geriatric aspects of a subject could be so designated in the title or in a footnote on the questionnaires submitted to this Council.

Based upon the premise that improvement in the quality of many postgraduate programs is an urgent need the achievement of which is likely to result in the regular involvement of more practicing physicians in continuation education, the studies of the Council in this phase of medical education will concentrate more upon qualitative efforts and suitable means for such evaluations. The improvements noted in this report in the past year over the previous year are heartening ones. The data presented provide a useful base for future comparisons during this stage of rapid and healthy evolution of postgraduate medical education. As Carl E. Anderson of the University of North Carolina said, "Knowledge does not keep any better than fish. It requires recharging through your creative effort."

EDUCATION VALUES OF THE GRANTS AND TRAINING AWARDS PROGRAMS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Because of their rapid growth since 1945 and their contribution and impact on undergraduate medical education, graduate education and training, and on the research activities and potentials of medical schools, any current report on Medical Education in the United States would be incomplete without presentation of the Educational Values of the Grants and Training Awards Programs of the United States Public Health Service. The following information reviewing the current status of these programs was prepared and submitted by the Office of Research Information, National Institutes of Health, Public Health Service, United States Department of Health, Education, and Welfare.

The research grants, fellowships, and training awards of the United States Public Health Service aid in the development of new knowledge in the nation's research institutions concerned with the health, medical, and related sciences. The scope of these programs has increased greatly since World War II, intensifying the search for basic causes of disease and for more effective methods of diagnosis and treatment. The programs both foster activity in needed areas of investigation and help increase America's supply of scientific personnel.

The National Institutes of Health, Public Health Service research center at Bethesda, Md., spends more than two-thirds of its annual appropriations for support of nonfederal research projects and re-able through schools of nursing and of public health. Stipends range from $2,400 to $4,800, according to the applicant's academic degree.

Another amendment to the Public Health Service Act provides traineeships to prepare nurses for teaching, supervision, and administration in all fields of nursing including public health. Stipends of $2,400 to $3,600 plus tuition, certain travel fees, and dependency allowances of $360 are available through schools of nursing. This program is administered by the Division of Nursing Resources, Bureau of Medical Services.

RESEARCH GRANTS

Research grants support medical research on all major health problems and in basic sciences related to medicine. Each institute makes grants for research within its area of interest, and the Division of Research Grants supports studies outside the scope of the seven institutes. The program is intended to increase research in medical, dental, and other professional schools and institutions and to stimulate investigations in scientific areas needing exploration. A sizable portion of the grants is devoted to basic research. The program aids indirectly in training junior personnel employed in the research projects.

The research grants constitute by far the largest program of public Health Service awards, both in terms of money expended and the number of institutions affected. Appropriations supported approximately 6,000 such grants in 1957.

Field investigation grants, awarded by the National Cancer Institute, support developmental research, community studies, and surveys that will contribute to the prevention, control, diagnosis, and treatment of cancer in the general population.

The National Institutes of Health cooperate with the two service bureaus of the Public Health Service in administering grants for special research projects. Among these are investigations of the health aspects of air and water pollution, projects for the development and utilization of hospital facilities and resources, and studies to improve nursing education and service. The projects are administered by the Division of Research Grants for the sponsoring divisions in the Bureau of State Services (the Division of Sanitary Engineering Services and the Division of General Health Services) and in the Bureau of Medical Services (the Division of Hospital and Medical Facilities and the Division of Nursing Resources).

HEALTH RESEARCH FACILITIES

In 1956 Congress approved a three-year program of construction grants to accelerate the building and equipping of urgently needed new laboratories and other health research facilities. Thirty million dollars was appropriated and granted in fiscal year 1957; another 30 million dollars has been appropriated for 1958; and present authorization includes 30 million dollars for one additional year. Applications submitted by nonfederal public and private institutions to the Division of Research Grants are evaluated by the National Advisory Council on Health Research Facilities, which in turn recommends action to the surgeon general. The construction projects are financed on a matching basis.

CONFERENCES AND SEMINARS

To encourage early and adequate exchange of information among investigators, numerous conferences, seminars, and symposiums are supported in connection with the grants and training programs. Many of the meetings are initiated and sponsored by the advisory study sections of the Division of Research Grants.

A conference held in May, 1957, sought expert information on methods of insulin assay which will help two of the division's study sections—Metabolism and Nutrition and Endocrinology—to evaluate applications for research grants. Under the auspices of the Division's Pathology Study Section, a special committee is directing attention to needs for research in pathology. The Biophysics and Biophysical Chemistry Study Section sponsored regional conferences in 1956 and 1957 to help determine how best to provide training and develop research in the theory and practice of medical-science instrumentation.

Meetings such as those supported by the National Institute of Mental Health provide orientation and training in specific services (the annual conferences, for example, on the reporting of mental hospital statistics) as well as opportunities for review and development of standards for various professions. The National Institutes of Health also provide personnel and exhibits for medical and scientific meetings of state, regional, national, and international scope.

In addition, the institutes, separately or as a whole, present lectures, seminars, and clinical conferences in which there is active participation by faculty members of universities and medical schools, by staffs of other research centers and Public Health Service hospitals, and by physicians in private practice and other leaders in the medical sciences.

NATIONAL DEFENSE AND MEDICAL EDUCATION

SELECTIVE SERVICE SYSTEM

The following information has been obtained from the Selective Service System National Headquarters, current to July 1, 1957.

The responsibility for primary classification of registrants rests with Selective Service local boards. If a person or his employer (college, medical school, or hospital) has requested his deferment and he has been classified as available for military service, the person or his employer may, within 10 days of the mailing of the notice of classification, file an appeal. The appeal will be reviewed ordinarily by the appeal board having jurisdiction where the registrant's local board is located, but it may be transferred for review to the appeal board having jurisdiction in the area where the registrant is working or attending college if this is requested in writing when the appeal is made. If the state appeal board should sustain the classification, the registrant or his employer may, if there is a dissenting vote in the appeal board, file a written request with the local board to have the decision appealed to the president of the National Selective Service Appeal Board. If there is no dissenting vote, the state or national director of Selective Service may appeal the case to the President.

The "college student certificate," SSS Form 109, continues to be prescribed for the use of institutions of higher learning, including those of medicine, in furnishing the local boards information regarding registrants who are enrolled as students in those institutions. These forms should be submitted to the local boards by the educational institution on request of the registrant. However, the mere filing of such a form does not constitute a request for occupational deferment, since, in order to establish the right of appeal as an interested party, a written request from the college or employer for occupational deferment must accompany the form. The registrant has the right of appeal if exercised in the prescribed 10 days. He may make his appeal informally in writing.

ELIGIBILITY FOR CONSIDERATION FOR DEFERMENT

The law empowers the President to provide for the deferment of any person whose deferment is equitable and in the national interest. Furthermore, it is the sense of Congress that provision should be made for the annual deferment from training and service of premedical, predental, and allied preprofessional students in numbers equal to those at present (1950) in attendance at colleges and universities as outlined in the general student deferment program. The President is also directed to establish a national advisory committee to advise the Selective Service System and to assist state and local advisory boards in selecting the needed medical, dental, and allied personnel. This provision expired on July 1, 1957, but it has been reentered in a bill which, at the time of preparation of this material, has passed the House but has not yet passed the Senate.

Sections 1622:15 and 1622:25 of the Selective Service Regulations specify the conditions under which students pursuing programs of higher education may be considered for deferment. Within these specified requirements, students of the healing arts are considered for deferment in the same manner as students pursuing other undergraduate or graduate courses at colleges, universities, and similar schools.

Any student not previously deferred who is pursuing a full-time course of study is entitled to a single period of statutory deferment, Class 1-S, until the end of the academic year. Such deferment does not preclude the possibility of later deferment in Class 2-S. Students whose activity in study, research, medical, or other endeavors is found necessary to maintenance of the national health, safety, or interest may be deferred in Class 2-S until completion of their college training, provided they maintain satisfactory scholastic records. A student who is deferred for study extends his liability for military training and service up to his 35th birthday instead of his 26th, as prescribed for registrants who have never enjoyed a deferment.

In selecting a student for deferment in Class 2-S, the Selective Service local boards may, at their discretion, be guided either by the score made by the student on the Selective Service College Qualification Test or by his record of academic performance. The college qualification test is given for the Selective Service System by the Science Research Associates, Inc., of Chicago. At present, in order to be eligible for deferment on the basis of this test, an undergraduate student must make a score of 70 or more. SSS Form 108 has been prescribed for furnishing to the local board the score made on this test. This score is confidential and may be divulged by the local board only to the registrant or to one holding his written consent.

To qualify for deferment on the basis of academic performance, the nonprofessional student must have maintained the following standing among the male members of his class: freshman year, upper one-half; sophomore year, upper two-thirds; and junior year, upper three-fourths. A student accepted for admission to medical school after July 1, 1951, for the class next commencing may be deferred, provided that, during his last full-time year at college or university, he was ranked among the upper one-half of the male members of his class or had a score of 70 or more on the Selective Service College Qualification Test.

A student accepted for admission by a graduate school after July 1, 1951, as a full-time student for the class next commencing may be deferred provided that, in his last full-time academic year in a college or university, he achieved a scholarship standing among the upper one-fourth of the male members of his class or scored 80 or more on the qualification test and provided that the graduate school certifies that he is meeting the degree requirements. Decisions concerning deferment of American students enrolled in foreign universities, including medical students, are the responsibility

The purpose of the program is to encourage the teaching of principles of military and disaster medicine by regular faculty members of our medical colleges. Nothing is mandatory; each faculty is free to accept or reject any part of the program not consistent with the local philosophy of medical education. All emphasis is on medical rather than military topics. It is hoped that the problem of national preparedness in medical education can be solved by interested faculty members on a local basis and under local control rather than through such methods as the establishment of a federal medical school or through direct federal intervention in curricular content.

Annually, MEND sponsors a series of symposiums, with the programs having been presented at federal medical installations by personnel in government service. During 1956-1957, the program included symposiums on (1) Aviation Medicine, Wright-Patterson Air Force Base, attendance 32; (2) Submarine and Diving Medicine, Experimental Diving Unit, Washington, D. C., attendance 35; and (3) Social and Preventive Psychiatry, Walter Reed Army Institute of Research, Washington, D. C., attendance 51. Each year MEND also conducts an Orientation Tour for Deans and Coordinators of MEND-affiliated schools, designed to introduce them to current problems and trends in the federal services. The tour of the past year included visits to Army, Navy, and Air Force facilities and concluded with a field trial of the FCDA 200-bed Emergency Hospital.

Activities at the 35 colleges have included special lectures, conferences, and demonstrations in the following subjects: surgery of trauma, wound ballistics, war wounds, radiobiology, defense measures to chemical and biological warfare, aviation medicine, management of mass casualties, civil defense responsibility of the medical profession, infectious disease problems in disaster situations, and others.

The national coordinator of MEND has an office at the Bureau of Medicine and Surgery, Department of the Navy, Potomac Annex, Washington 25, D. C.

Army, Navy, and Air Force Procurement Program

The following information summarizing the Army, Navy, and Air Force procurement programs has been submitted by the office of the Assistant Secretary of Defense (Health and Medical), current to June 18, 1957. It has been prepared so as to give the reader a general picture of current procurement programs in the medical branches of the armed services insofar as they concern undergraduate and graduate medical education.

ARMY

Early Commissioning Program for Medical Students

Medical students may apply for commissions in the grade of second lieutenant, Medical Service Corps, U. S. Army Reserve, for inactive duty without pay and allowances while attending medical schools. Students participating in this program will be obligated to accept superseding appointments in the grade of first lieutenant, Medical Corps, U. S. Army Reserve, upon graduation and to serve on active duty for a period of two years upon completion of internship. Persons appointed under this program will be assigned to Ready Reserve units in appropriate Medical Corps vacancies in TOE and TD troop program units, USAR Schools, and USAR Control Groups (Annual Training).

Participation in the program will not in itself increase the active service liability or obligation of the participant. However, participants will be required to certify to their understanding that appointment prior to attaining age 26 incurs an obligation for active participation in the Reserve training unless excused under regulations to be prescribed by the Secretary of the Army. Those individuals assigned to units who fail to graduate will be relieved from such assignment. Failure to graduate from medical school, resulting in subsequent Selective Service reclassification as 1-A, may result in induction as an enlisted man under current policy.

Clinical Clerkship Training Program

Participants in the Clinical Clerkship Training Program will be medical students at the sophomore-junior and/or junior-senior level, who now hold appointments in the Medical Service Corps, U. S. Army Reserve, as lieutenants, or will be commissioned in sufficient time to participate in the program. A limited number may also participate in the program as "student employees" under Civil Service. Students in Army Reserve status who are selected for this clinical clerkship must volunteer to perform not more than 60 days of active duty for training, including travel. Students who are assigned to a USAR Control Group (Annual Training) will fulfill their annual requirement for active Reserve participation by performing the above period of active duty for training. The students who are assigned to a TOE or TD Reserve Unit, or a USAR School, will perform this training "in lieu of" the annual unit training (summer camp) requirement with their unit.

The program will consist of approximately eight weeks of instruction at Army teaching hospitals, which will be devoted to military medicine and other military instruction, and the remaining time will be divided into two equal periods, one embracing internal medicine and its subspecialties, the other surgery and its subspecialties. A preventive medicine program will also be available and will include one week of general orientation in military organizations, its functions and procedures, followed by detailed observation and assistance in a comprehensive preventive medicine program. Research clerkships are also available in a limited number for selected individuals at Walter Reed Army Institute of Research. A student, who is selected for a clerkship between his sophomore-junior year, is not eligible to apply for the clerkship between his junior-senior year.

Senior Medical Student Program

Selected senior medical students will be commissioned as second lieutenants, Medical Service Corps, U. S. Army Reserve, and will be permitted to continue their studies in their respective schools as officers on active duty with full pay and allowances until they complete their academic requirements for the degree of doctor of medicine. Upon completion of their medical education, selected students will be required to accept appointments in the grade of first lieutenant, Medical Corps, U. S. Army Reserve; they must agree to participate in the National Intern Matching Program, Incorporated, and serve on active duty for three years immediately following their civilian or military internship. This includes time obligated under the Universal Military Training and Service Act, if applicable. Participants who are not matched for an Army internship will be released from active duty for one year to allow them to complete a civilian internship, and they will then be recalled to active duty for three years at the end of the 12-month period.

Military Intern Program

Selected graduates of approved medical schools will be commissioned as first lieutenants, Medical Corps, U. S. Army Reserve, and will be ordered to active duty for the purpose of completing a 12-month internship in a military hospital. Individuals participating in the program will not incur obligatory service; however, those individuals who will be liable for military service under the provision of any law will be required to serve that obligation immediately upon completion of their internships. Military interns will be encouraged to apply for Regular Army and residency training.

Applicants must agree to participate in the official cooperative plan of internship appointments for first-year internships as conducted by the National Intern Matching Program, Incorporated.

Military Resident Program

Personnel selected for participation in the Military Resident Program will be commissioned in the Regular Army Medical Corps; those who are not members of the Regular Army Medical Corps will be commissioned prior to assignment to residency training. Attendance at the Company Officer Course for 22 weeks prior to entry into the residency program will be required of those individuals who have not had six or more months of duty with a tactical unit as a Medical Corps Officer. Selections will be made from among qualified applicants in accordance with the needs of the Army in the various specialty fields. Individuals placed in residency training will be required to serve one year on duty status for each year of training received.

In the event spaces in the specialty requested are not available in Army hospitals on one of the next three starting dates after receipt of application, opportunity may be offered to applicants approved for Regular Army to obtain residency training in a Veterans Administration Hospital, Gorgas Hospital, Ancon, Canal Zone, or any other civilian hospital approved by the Council on Medical Education and Hospitals of the American Medical Association, to fill existing requirements. Individuals participating in the program in civilian hospitals under this policy are required to serve on active duty for two years for the first year of training received and one year for each subsequent year.

NAVY

The Ensign, 1995 (Medical) USNR Program

After passage of the Selective Service Act of 1940, many medical students who were obligated for military service by the act indicated their desire to affiliate with the Naval Reserve in order to assure that their period of active duty would be with the Navy's Medical Department. To make this possible and to provide deferment from active duty until graduation, the Ensign, Probationary (Medical) Program was established before the onset of World War II. The first appointments late in 1941 were limited to third-and-fourth-year medical students attending class "A" (approved) medical schools. Within a few months, however, the program was expanded to include first-and-second-year medical students, and it has since come to be known as the Ensign, 1995 (Medical) Program.

The number "1995" is a designator used to identify officers within the Department of the Navy by a code system. The first three digits, 199, indicate that the officer is under instruction in a civilian school; the last digit, 5, indicates an officer of the Naval Reserve. Thus, 1995 followed by (Medical) refers to an officer of the Naval Reserve with the rank of ensign under instruction in an accredited medical school.

The qualifications for appointment as Ensign, 1995 are as follows:

A. Sex: Men and Women

B. Age:

(1) Candidates with no prior military service should be at least 19 and of such age that upon expected date of graduation, they will be under 33. The maximum age limit with prior active military service may be adjusted on a month-for-month basis, depending upon the number of months of active military service performed, but in no case to exceed 36 months. Applications cannot be accepted from any person who will have passed his or her 36th birthday when he or she becomes eligible for super-

seding appointment in the grade of Lieutenant (junior grade) following graduation from medical school.

C. Educational

(1) Should be within 120 days of completion of all academic work required for enrollment in medical school.

(2) Should be in attendance or have been accepted for and be within six months or less of the date of the next entering class at one of the American or certain of the Canadian medical schools accredited by the Council on Medical Education and Hospitals of the American Medical Association, including approved schools of the basic medical sciences in the United States and Canada. Applications cannot be accepted from students who will attend a medical school in a foreign country other than Canada. Appointment of students who will attend a Canadian school will depend upon the proximity of the school to an Office of Naval Officer Procurement.

(3) Should NOT have commenced the final year of medical school.

D. Professional:

(1) Applicants are required to establish professional fitness and aptitude for the Naval Service through interviews and a review of college and employment records.

E. Physical Standards:

(1) Should be found physically qualified for appointment to commissioned status in accordance with established regulations.

The primary objectives of this program are to provide (1) an opportunity for qualified medical students to affiliate with the Naval Reserve as commissioned officers while still in medical school; (2) assurance that these officers will be able to complete their medical studies and internship prior to fulfilling their obligation for active military duty; (3) assurance that, when they do enter the service, it will be within the Navy's Medical Department; and (4) a primary source of qualified candidates for the Naval Intern Program and for the Medical Corps of the Navy and Naval Reserve.

As an added incentive for membership in the Ensign, 1995 Program, there has been established a 30-60 day active duty research clerkship training program at naval research activities throughout the United States. This program provides orientation and indoctrination into medical research as well as on-the-job training for the undergraduate medical student during his vacation from medical school. Full pay and allowances are authorized for these officers while so serving on active duty. Medical students who are commissioned as Ensign, 1995 (Medical) USNR and who have successfully completed the first year of medical school are eligible to participated in this program. Research clerkships offer a detailed review of the specific research program being conducted at the training activity. A part of the training is spent in each research department, and the trainee serves as an assistant in actual laboratory research on a specific project under way at that time.

Also established are clinical clerkships at Naval teaching hospitals throughout the United States. Beginning July 1 of each year, this program offers the medical student who has completed his second year of medical school 30-60 days of active duty for training during his vacation from medical school. Clinical clerkships are planned to provide indoctrination and orientation into naval medicine, rotation through the major professional services of a Naval teaching hospital, and performance of on-the-job training duties commensurate with the individual's professional attainments.

Each year during the summer months a limited number of mature medical students holding commission as Ensign, 1995 are authorized to participate in NROTC–Midshipmen Cruises. Selections for this important training are made from students who have completed at least their second year of medical school with priority being given those who have completed their third year. Trainees receive an excellent indoctrination and orientation into the practices of Naval medicine aboard ship under the supervision of experienced medical officers of the Regular Navy and Naval Reserve.

To assist the medical student financially, and to attract future doctors of medicine toward a career in the Navy Medical Corps, the Active Duty Senior Medical Student Program was authorized by the Secretary of the Navy two years ago. To be eligible for participation, the individual student must be an Ensign, 1995 (Medical) USNR, or agree to accept such an appointment if selected. Further, he must have completed his third year of medical school and be eligible for enrollment in the ensuing year. During attendance in medical school, these officers serve on active duty, receiving the full pay and allowances of their rank. In return for participation in this program, the individual serves one year plus the 24 months obligated by the Universal Military Training and Service Act, as amended.

Here are some important facts concerning the Senior Medical Student Program:

(1) This program is open to qualified students enrolled at medical schools accredited by the Council on Medical Education and Hospitals of the American Medical Association. Students who have completed their second year of medical school may make application for this training at an Office of Naval Officer Procurement. Active duty commences and continues while in attendance during their senior academic year. To be eligible for participation, he must be an Ensign, 1995 (Medical) U. S. Naval Reserve, or agree to accept such an appointment if selected. A board convened in the Bureau of Medicine and Surgery selects the candidates for participation in this program.

(2) Physical standards of this program are the same as those established for Regular Navy staff corps officers.

(3) Active duty orders are mailed to the student via the Professor of Naval Science or the District Commandant. Active duty commences upon receipt of such orders and completion of proper reporting endorsements.

(4) The student agrees, in writing, to accept a Regular Navy commission, and if a Regular Navy commission is not tendered, to accept an appointment in the Naval Reserve.

(5) In accepting an appointment in the Regular Navy or Naval Reserve, as a result of having active service in the Senior Medical Student Program as an Ensign, 1995, he is obligated to serve on active duty and to retain the commission for a period of three years. This active service will commence upon completion of not more than 12 months of a civilian or Naval Internship. Providing that the student has 24 months obligated military service to perform, this active duty affords a splendid opportunity to discharge the military obligation and serve an additional year in return for the benefits received in the Senior Medical Student Program. With no obligated military service to perform, upon enrollment in the Senior Medical Student Program, the student obligates himself to retain his commission for the same period of three years.

(6) As a medical student, he receives the full pay allowances of an Ensign, 1995, while so enrolled on active duty. Pay and allowances are based on longevity as follows:

(*a*) Less than two years and no dependents, he receives $338.58 per month; with dependents, (a member of his family or household dependent upon him for financial support) he receives $355.68 per month.

(*b*) Over two but less than three years and no dependents, he receives $353.40 per month; with dependents, he receives $370.50 per month.

(*c*) Over three but less than six years and no dependents, he receives $412.68 per month; with dependents he receives $429.78 per month.

(7) In addition to the pay and allowances, the student is credited with 2½ days of annual leave for each 30 days of active duty served.

(8) The wearing of the Naval uniform is permitted only when authorized by appropriate naval authority.

(9) Timing is very important. An average of four months is required to completely process each application. Feb. 1 each year is the absolute deadline that completed applications must be forwarded to the Bureau of Naval Personnel, Navy Department, Washington, D. C. This is necessary so that sufficient time is given to the board in the Bureau of Medicine and Surgery to pass on the professional qualifications, and the board in the Bureau of Naval Personnel to pass on the over-all qualifications of each applicant. Those selected are required to meet the moral, mental, and physical standards of Navy acceptance. All applicants will be notified by individual letter of their acceptance or rejection not later than the first week in May.

(10) Upon completion of the sophomore year of medical school, the student desiring to enroll in the Senior Medical Student Program should make application at the nearest Office of Naval Officer Procurement located in the following cities:

Albany 1, N. Y.
Boston 9
Butte, Mont.
Cincinnati 2
Denver 2
Detroit 26
Los Angeles 17
Minneapolis 1
Raleigh, N. C.
Salt Lake City
Seattle 1
Philadelphia 7
New Orleans 16
Albuquerque, N. Mex.
Buffalo 3
Chicago 11
Dallas 2, Texas
Houston 2, Texas
Kansas City, Mo.
Macon, Ga.
Nashville, Tenn.
St. Louis 1
San Francisco 2
Washington 25, D. C.
Pittsburgh 19
Omaha 11, Neb.

Naval Internships

A Naval Internship is 12 months in duration, of the rotating type, and is conducted in such a manner as to conform with the requirements of the Council on Medical Education and Hospitals of the American Medical Association and its publication, "Essentials of an Approved Internship," of Dec. 1, 1955.

During the forthcoming year naval internships will be offered at the U. S. Naval Hospitals located at Chelsea, Mass.; Newport, R. I.; St. Albans, N. Y.; Philadelphia; Bethesda, Md.; Portsmouth, Va.; Charleston, S. C.; Jacksonville, Fla.; Pensacola, Fla.; Great Lakes, Ill.; Bremerton, Wash.; Oakland, Calif.; Corona, Calif.; Camp Pendleton, Calif.; and San Diego, Calif.

Naval Internships are not mandatory upon the Ensign, 1995 (Medical) officers. In fact, this is a separate program sponsored by the Navy, offered through the National Intern Matching Program Incorporated to senior medical students of approved schools in the United States, and to the eligible American students in the approved schools in Canada.

These internships compare most favorably with the best civilian hospital internships and each year the number of applicants exceeds the number of Naval internships available, usually by a ratio of two or three to one. It is not required that a senior medical student be a participant in the Ensign, 1995 (Medical) Naval Reserve program in order to apply and be accepted for a Naval Internship.

For this reason, if the Ensign, 1995 does not desire a naval internship, but wishes to select a civilian internship, he should list only the civilian hospitals, in the order of his preference, when applying through the matching plan; thus, he will not be competing with those who do want naval internships, and request to be so matched.

If an Ensign, 1995 enrolls in the Medical Student Program and chooses a civilian internship rather than a naval internship, he will be on inactive duty during this period. Following completion of the civilian internship, he will be immediately placed on active duty in compliance with the previous service agreement.

The basic requirements for an applicant applying for a Naval Internship are as follows: (1) be a graduate or potential graduate of a medical school listed as approved by the Council on Medical Education and Hospitals of the American Medical Association; (2) be a citizen of the United States; (3) be registered with and his name appear in the Official Directory of Students published by the National Intern Matching Program; and (4) meet the prescribed physical standards for a commission in the United States Naval Reserve.

Clinical pathological conferences, tumor boards, supervised ward rounds, basic sciences indoctrination, audiovisual educational aids, seminars, regular and special staff meetings, small group discussions of clinical problems and journal clubs in Naval hospitals are well organized, and interns are encouraged and given ample opportunity to take part in these activities. Interns are also permitted to devote special attention, perform reference work, and do clinical research in connection with their most outstanding or instructive cases and to prepare their materials for submission for publication in leading medical journals.

Salary.—A medical school graduate accepted as an intern will be commissioned as lieutenant (junior grade), Medical Corps, United States Naval Reserve and will receive the compensation and privileges of his rank. Interns with dependents receive $5,729.76 per year while those without dependents receive $5,524.56 per year. Currently promotion to the rank of lieutenant usually occurs early in the internship training period. After such promotion, the amount received per year will be increased to $6,298.56 for those with dependents and to $6,129.36 for those without dependents.

In order to become eligible for consideration for Naval internship, candidates must first file application for commission in the Naval Medical Corps. Application forms may be secured by visiting or writing the nearest Office of Naval Officer Procurement or the nearest Naval hospital in the continental United States. In filling out an application form, it is suggested that five hospitals be listed in the order of preference. In all but a few instances, assignments have been made from among the first three listed. It is important for medical students applying for internship in the Navy or other Federal Services to observe the following quotation which is excerpted from the "Directory of Approved Hospitals Participating in the Matching Program for Internship Appointment," of 1956, published by the National Intern Matching Program, Chicago 1: "Please note that in applying for internship training in the Air Force, the Army, the Navy, or the Public Health Service, the student applies, insofar as the matching is concerned, directly to the service involved and not to a specific hospital. The student, however, may be requested, by the government service involved, to designate several service hospitals in order of choice. If matched, the service will attempt to meet the student's first choice. In cases where this is not possible, the student may be assigned another of his choices within that service. Each service is completely separate, and this assignment to a particular hospital is entirely performed by the service involved. In the matching program the student is matched only to the service itself, and not to a particular hospital within it. The government services do not issue internship contracts."

Applications for commission in the Naval Medical Corps for intern training are accepted between Sept. 1 and Dec. 1 of each year. That portion of the application pertaining to internship is accepted between Oct. 1 and Dec. 1 in accordance with the provision of the National Intern Matching Program. There is no obligated service requirement for Naval internships. The year served on active duty as an intern does not satisfy any portion of the obligation imposed by the provisions of the Universal Military Training and Service Act, as amended.

In order to permit the processing of application in sufficient time to meet all deadline dates, it is vitally essential that candidates submit their application as early as possible after Sept. 1.

Any additional information may be obtained, upon request, from the Bureau of Medicine and Surgery, Department of the Navy, Washington 25, D. C.

Naval Residency Training Programs

Nine U. S. Naval Hospitals are now approved for residency training in the various clinical specialties of medicine and surgery by the Council on Medical Education and Hospitals of the American Medical Association and by the respective American Specialty Boards. These naval hospitals are located at Chelsea, Mass.; St. Albans, N. Y.; Philadelphia; Bethesda, Md.; Portsmouth, Va.; Great Lakes, Ill.; Oakland, Calif.; Corona, Calif.; and San Diego, Calif. Residency training for medical officers is also actively sponsored by the U. S. Navy in selected outstanding civilian hospitals, schools, and medical centers of the United States in those few specialties wherein the Navy does not operate formalized training programs. U. S. Naval Hospital residency training activities embrace the specialties of allergy, anesthesiology, cardiovascular disease, dermatology and syphilology, general practice, internal medicine, neurology, obstetrics and gynecology, ophthalmology, orthopedic surgery, otolaryngology, pathology, pediatrics, psychiatry, radiology, surgery, thoracic surgery, and urology. Formally approved training in civilian institutions is conducted in plastic surgery, neurological surgery, preventive medicine and public health, and in children's orthopedic surgery.

Medical officers eligible for assignment to duty as a resident are Regular Navy officers and those Reserve medical officers who have completed their active service obligations under the Universal Military Training and Service Act, as amended. Requests for residency training duty should be forwarded to the Chief of the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C. All such requests are acted upon by the Bureau Advisory Board on professional training matters. This board makes recommendations in accordance with the merits of each case, taking into consideration the professional experience, background, and aptitude of the candidate and the needs of the service in the particular specialty in which training is desired. One year of obligated service is required for each year of training received in a Naval hospital. Two years of obligated service are required for the first year of training received in civilian institutions and one year of obligated service for each successive year so spent.

It is the policy of the Bureau of Medicine and Surgery to continue a resident in training until formal requirements, leading to eligibility to undergo examination by an American Specialty Board, have been met. This procedure will be strictly adhered to in every case where the needs of the service permit, barring national emergencies, provided that such an arrangement remains mutually agreeable and satisfactory aptitude and progress as a resident are demonstrated. The highest priority in the assignment of naval medical officers to residency training is given those who have completed or are about to complete a normal tour of active duty with an operational unit of the U. S. Navy at sea or on foreign shore stations.

Other Graduate Training for Naval Medical Officers, Including the Military Medical Specialties

Aviation Medicine.—The School of Aviation Medicine at Pensacola, Fla., convenes four classes annually of approximately 30 students, for didactic instruction in aviation medicine and actual instruction in flight and ground school. Upon completion of this course of instruction they are designated naval flight surgeons. Additionally, the School of Aviation Medicine is approved for residency training in aviation medicine. This training consists of one year of public health at a civilian institution and two years of residency training in aviation medicine at the School in Pensacola. Upon completion, successful candidates are assigned to operational units under the preceptorship of Board certified flight surgeons for a period of three years. They are then considered Board eligible for certification in aviation medicine. Further opportunities are available in several large Naval laboratories for work in research related to aviation medicine. The laboratories are located at Johnsville, Pa., Philadelphia, and the School of Aviation Medicine, Pensacola, Fla. A medical officer interested in the aeronautical aspects would do well to consider this advanced training.

Submarine Medicine.—This military medical specialty supports all phases of underwater operations in the Navy. Training in this specialty is particularly applicable to those having an interest in occupational or preventive medicine and research in physiology. The basic six months course of training includes lectures, demonstrations, laboratory work, practical experience, and cruises in submarines, rescue vessels, and tenders as available. The majority of the course is given at the Submarine School and Medical Research Laboratory at the Submarine Base, New London, Conn. Eight weeks of the six months' period is spent at the U. S. Naval Deep Sea Diving School, Naval Gun Factory, Washington, D. C., where the student learns about diving by making dives and about the physiological problems involved through classroom and laboratory periods.

Upon completion of a tour of duty with an operational unit the medical officer may apply for postgraduate training in various fields. He may prepare himself for later certification in occupational medicine by attending the academic year at the University of Rochester and later service in nuclear powered submarines or surface vessels. He may prepare for certification in preventive medicine by attending one of the public health schools and subsequent field duty ashore and afloat. He may prepare himself for a career in research by a postgraduate year at the University of Pennsylvania College of Medicine followed by duty at Naval laboratories and with operational units. Clinical medical specialty training in all fields is available and having served with operational units is an additional credit to one's application.

Research Program.—The Navy offers 60 Navy medical officer billets for military medical research careers. These opportunities embrace basic medical research in aviation medicine, submarine medicine, amphibious and field medicine, tropical and exotic diseases, and in the areas of the medical problems of nuclear, biological, and chemical warfare defense. These 60 billets are distributed among 15 in-service laboratories, strategically located throughout the world, and represent the program indicated above.

Amphibious and Marine Corps Field Medicine.—Recognized as an important military operational medical specialty, this training is conducted at Camp Lejeune, N. C., Camp Pendleton, Calif., and the Marine Corps Educational Center, Senior School, Quantico, Va. This specialty offers valuable varying degrees of clinical experience including physical diagnosis is not listed but continues to increase yearly.

GRADUATE MEDICAL EDUCATION

Although residency training programs were first inaugurated in Veterans Administration hospitals in conjunction with medical schools and under supervision of deans committees, there have been certain changes as the program has evolved over the past 10 years. There are certain large VA hospitals with competent staffs which are not located conveniently near medical schools but which are capable of conducting adequate residency training. For nine of these hospitals a substitute for the deans committee has been created and is known as a medical advisory committee. It is composed of highly qualified consultants from the surrounding community and has duties and responsibilities similar to those of deans committees. There are two VA hospitals which conduct residency training without the aid of either a deans committee or a medical advisory committee. On the other hand, the existence of a medical school relationship and a deans committee does not invariably mean that residency training is conducted. There are certain small hospitals which benefit materially from medical school association but for which it is not feasible to inaugurate residency training programs. There are now eight such VA hospitals whose postgraduate and inservice training programs for full-time employees are supervised by deans committees but in which residency training programs are not contemplated.

There are accordingly 92 VA hospitals conducting residency programs. Of these, 81 are supervised by deans committees, 9 by medical advisory committees, and 2 have residency programs without any non-VA supervision. There are 90 hospitals with deans committees, of which 81 conduct residency programs, 8 conduct no residency programs, and one receives residents on an affiliate status. There is an increasing trend for non-VA hospitals to send residents for affiliate training to VA hospitals even though the VA hospitals do not have a deans committee, medical advisory committee, an existing residency program. There are two such hospitals now receiving residents and several more are negotiating for such relationships.

Veterans Administration hospitals support residency training in 21 specialties. The attached table (table 46) reveals the specialties and the numbers of residents on duty as of January, 1957. The total number of 2,542 VA residents represented 12% of the total on duty in the United States for 1955-1956. Noncitizen residents cannot be employed by the Veterans Administration but are permitted to serve without compensation in VA residency training programs on an exchange rotation basis when they are bona fide appointees of university hospitals.

Because of the serious recruitment needs of the Veterans Administration for certain scarce categories of full-time personnel, "career" residency training programs have been inaugurated for the purpose of providing approved residency training to physicians who are paid not a residency stipend, but on a full-time basis. Under such an arrangement, the residents agree to provide a further period of obligated service at the completion of their training and in hospitals selected by the Veterans Administration. There are 241 such residents serving on a career basis distributed in the specialties of anesthesiology, neurology, physical medicine, psychiatry, and radiology. On July 1, 1957, a small career residency program was added in pathology.

Within the total of 2,542, there are 216 fourth-year residents and 31 fifth-year residents. Table 47 reveals the maximum stipends now permissible for VA residents. Board, room, and laundry are not provided free and there are no additional fringe benefits. As of Jan. 1, 1957, 110 or approximately 4% of all VA residents were graduates of foreign medical schools, although citizens of the United States.

Table 46.—*Veterans Administration Residents January, 1957*

	Career Residents	All Other Residents	Total Residents
Allergy	...	1	1
Anesthesiology	6	72	78
Cardiology	...	4	4
Dermatology	...	30	30
Gastroenterology	...	8	8
General surgery	...	721	721
Internal medicine	...	662	662
Neurology	22	20	42
Neurosurgery	...	34	34
Ophthalmology	...	56	56
Orthopedic surgery	...	113	113
Otolaryngology	...	28	28
Pathology	...	92	92
Physical medicine	19	4	23
Plastic surgery	...	9	9
Proctology	...	1	1
Psychiatry	184	193	377
Pulmonary diseases	...	6	146
Radiology	10	136	146
Thoracic surgery	...	24	24
Urology	...	87	87
Totals	241	2,301	2,512

Of great interest is the developing trend to combine residency training programs between several hospitals on a community basis. Veterans Administration hospitals participate in this activity on a basis of local determination, but the Department of Medicine and Surgery encourages this development wherever possible. Where there is a complete combination of resident selection and appointment and of training facilities between several hospitals, and where the VA hospital is listed by name as one of the participating members under the "indented listing" scheme of the approved programs published in The Journal, such residency programs are known as "integrated" programs. Of the total of 585 approved residency programs in the Veterans Administration, 30% are conducted on an integrated basis. Where a Veterans Administration hospital maintains full approval for a residency program in its own name even though residents are rotated to other institutions with approved programs, the designation is a "Collaborating" program. Fifty per cent of the existing approved residency programs are now conducted on a collaborating basis. Where a Veterans Administration hospital has no approval for the conduct of residency programs on either a collaborating or an integrated basis, but where it merely accepts residents by detail from a hospital conducting approved training, the designation of "affiliate" residency training is used. Approximately 7% of the VA programs are conducted on this basis. The remaining 13% of VA residency programs carry independent approval and are conducted wholly within VA facilities without a relationship to other hospitals.

Because over 50% of the patient load of Veterans Administration hospitals is for psychiatric or neurological disability, it is to be expected that residency training will be emphasized in this special category. For the year 1955-1956, the residents in psychiatry throughout the United States constituted 9% of the total residents on duty in all hospitals. For that same year, the residents in psychiatry in Veterans Administration hospitals constituted 15% of all the psychiatric residents in the United States and constituted 20% of all residents on duty in Veterans Administration hospitals. It is evident, therefore, that residency training in psychiatry in Veterans Administration hospitals receives greater emphasis and support than does residency training in psychiatry throughout the country in relation to all residents in all specialties.

TABLE 47.—*Resident Stipends (Maximum)*

	Per Year
Junior Resident	$2,840
Intermediate Resident	3,195
Senior Resident (1st year)	3,550
Senior Resident (2nd year)	4,000
Senior Resident (3rd year)	4,500

Residency training in Veterans Administration hospitals emphasizes the team concept of hospital medical and dental care programs. Graduate training in dentistry is conducted in 26 VA hospitals in affiliation with 21 of the 46 dental schools of the United States. In the fields of nursing, hospital administration, and the paramedical specialties there are 4,638 trainees. The coexistence of these training programs with medical residency programs produces a hospital and clinic environment mutally beneficial to both programs. While yielding an essential service to patients, these training programs make a significant contribution to the trained manpower pool of the United States.

PARAMEDICAL SCHOOLS

SCHOOLS FOR MEDICAL RECORD LIBRARIANS

The Council has worked closely with the American Association of Medical Record Librarians since 1942 in the development of criteria for and evaluation of educational programs in medical record library science. Initial and continued approvals of schools are considered by the Council on the basis of the recommendations of the Committee on Education and Registration of the American Association of Medical Record Librarians, which has an able education director who makes periodic survey-visits to schools. Significant studies to further advance training in the field are being carried out effectively by the American Association of Medical Record Librarians.

Revision of the curriculum currently recommended by the Council and the American Association of Medical Record Librarians is under consideration. Revisions will be gradually implemented and based upon studies which will not be completed for several years.

At the present time there are 30 approved schools. Student enrollment increased in 1956 to 145 students in the senior class of degree programs and in certificate programs, which represents nearly a 7% increase over 1955. There was a training capacity for 262 students in these programs, but five schools had no students enrolled during 1956. Accordingly, the occupancy rate was 53% for the senior class of 7 degree programs with senior students in 1956 and 72% in the 19 active certificate programs. Since students were separately enrolled in both programs offered by one school, students were enrolled in 26 programs offered by 25 schools. The number of graduates for seven degree programs was 33. In addition, there were 74 graduates from 13 certificate programs or a total of 107 graduates from 19 schools in 1956.

Approved schools offer curriculums which include theoretical instruction and practical training in hospitals. When the hospital training is sequentially and properly integrated with collegiate studies, a degree is available after four years of study. Among the 10 schools offering degree programs, 8 admit qualified high school graduates and 2 schools offer a curriculum of 12 months' duration with admission requirements of three years of preparatory collegiate preparation. In the 21 schools offering certificate programs of one year's duration, 17 require two years of college prior to admission. All but one of these 17 schools will also admit graduates from an accredited school of professional nursing of at least three years' duration. A college degree is required for admission into four certificate schools. Twenty-five schools, one of which offers both degree and certificate programs, are conducted by or in affiliation with colleges or universities. Lists of approved schools are available from the Council. Applicants should write directly to the Medical Record Librarian–Director of the School.

Schools conducting degree programs usually begin in June, and the majority of certificate programs admit students in September. Tuition ranges from $66 to several hundreds of dollars per year and one school requires none. Application for approval by a hospital or university should be made to the Council on Medical Education and Hospitals of the American Medical Association. Inquiries regarding career opportunities and registration of qualified medical record librarians should be addressed to the American Association of Medical Record Librarians, 510 N. Dearborn St., Chicago 10.

SCHOOLS FOR MEDICAL RECORD TECHNICIANS

Schools for medical record technicians are conducted to train the medical record technician who, working under the supervision of a qualified medical record librarian or a medical record committee, performs the technical tasks associated with the maintenance and custody of medical records.

As in the case of schools for medical record librarians, the Council has developed educational criteria for and evaluates schools in close collaboration with the American Association of Medical Record Librarians.

The training of medical record technicians should be conducted in acceptable general hospitals having a minimum of 4,000 annual admissions. These admissions should include an adequate distribution of patients in the various clinical services commonly found in general hospitals. Candidates for admission to an approved school should be proficient in typing and preferably also in shorthand. They should have completed the requirements for high school graduation or should have passed a college entrance examination for admission to an accredited college or university. The minimum length of training is nine months and should include theoretical instruction in anatomy, medical terminology, and medical records, with additional practical training in admitting and discharge procedures, indexing, preparation of reports, and other activities associated with the medical record department.

There are 10 hospitals approved by the Council for training medical record technicians. These schools reported a training capacity for 69 students with an enrollment of 55 students and 37 graduates in 1956. Data for 1955 are eight schools with a training capacity for 50 students, an enrollment of 35 and 28 graduates. Qualified high school graduates are accepted for courses of from 9-12 months' duration.

Hospitals should apply to the Council on Medical Education and Hospitals for approval. Special forms will be supplied for this purpose, and, when the required information has been received, the proposed training program will be reviewed in collaboration with the Committee on Education and Registration of the American Association of Medical Record Librarians. The institutions applying for Council approval will, in all instances, receive full information and every possible assistance in the planning and development of training programs in accordance with present standards. There continues to be an acute shortage of qualified medical record librarians and medical record technicians. Excellent opportunities exist for graduating students. Inquiries on career opportunities, registration, and accreditation of qualified medical record personnel should be addressed to the American Association of Medical Record Librarians, 510 North Dearborn St., Chicago 10.

SCHOOLS FOR MEDICAL TECHNOLOGISTS

In its continuing efforts to assist hospitals in the development of training programs for medical technologists, the Council cooperates closely with the American Society of Clinical Pathologists, the Board of Schools of Medical Technology, and the Board of Registry of the Society. The board of schools was established by the society in 1949 to serve as the major advisory body to the Council in all matters relating to standards and the evaluation of educational programs. Revisions of the standards occurred in 1941, 1943, 1947, 1949, and 1953. In 1956, the requirement for training in electrocardiographic technique was deleted from the curriculum in the "Essentials of an Acceptable School of Medical Technology." The Board and Council encourage that such training be continued when the pathologist-director considers it advisable.

The board of schools assists the Council in the evaluation of new applications and annual reevaluations of approved schools. A survey program is carried out by regional surveyors appointed by the board of schools. These pathologists visit all new schools and, in addition, periodically revisit approved schools. An extensive resurvey of existing educational programs is actively in progress by pathologists appointed by the board who make an invaluable contribution to the program in experience and time. The recommendations of the board on new applications and existing schools of medical technology are submitted to the Council for its consideration.

There are 656 schools presently approved by the Council, or an increase of 6% over the 618 approved as of Sept. 22, 1956. Enrollment increased 4% to 2,903 students in 1956 and the number of graduates was 2,140, which represents a 3% increase over 1955. With a student capacity of 4,796, the occupancy rate in 1956 was 61%. The increases in student enrollment and number of graduates reflect the effective recruitment program of the National Committee for Careers in Medical Technology sponsored by the College of American Pathologists, American

Society of Clinical Pathologists, and American Society of Medical Technologists and the concerted recruitment activities of the faculties of approved schools and affiliated colleges and universities.

The admission requirement to an approved school of medical technology is two years of college, including certain required courses, in a college or university accredited by a recognized association. Eighty-two per cent, or 536 training programs, base admission on this minimum requirement; 91 (14%) require three years of preclinical college education; and 29, or 4%, require a baccalaureate degree for admission. It should be noted that the following preferences were indicated by pathologist-directors in their consideration of applicants for admission: 63 (10%) specified a preference for students with two years of college preparation; 212 (32%) preferred three years of college; 252 (38%) indicated that preference was given to students with a baccalaureate degree; and 129 (20%) indicated no preference.

The number of hospital schools with college or university affiliations continues to increase. In 1956, a total of 437 hospital schools (67%) had college or university affiliations. Such affiliations are encouraged since they stimulate the development of well-organized training programs suitably integrated with the college curriculum and also serve as a continuing source of students. If properly integrated, a degree is available upon completion of three years of college education followed by one year of hospital training in 409 (62%) of the 656 approved schools. Active liaison between the hospital and the affiliated college is strongly recommended through regularly scheduled meetings of an advisory or coordinating committee comprised of representatives from each faculty. Particular emphasis on such meetings is planned during the next year to encourage this liaison.

The minimum duration of the hospital course acceptable for approval is 12 months. Ninety per cent, or 593 schools, offer a course of 12 months' duration. The remaining 10% of the programs vary from 12½-36 months in length. Tuition is required by 151 (23%) and a minimal breakage fee by 71, or 11%, of the schools. Students receive a stipend in 306 (47%). Room and board are offered in 183 (28%), and board, often consisting of lunches only, in 165 (25%). The remaining 308 schools (47%) offer neither room nor board. All states, the District of Columbia, the Canal Zone, Hawaii, and Puerto Rico have approved schools. Interested high school students should apply to accredited colleges and universities of their choice; those students in college or with collegiate backgrounds should apply to the pathologist-director of the laboratory school of their choice. Lists of approved schools of medical technology, which indicate those schools that have collegiate affiliations, are available from the Council.

Application for approval of a school for the training of medical technologists should be made to the Council on Medical Education and Hospitals of the American Medical Association. Forms will be supplied for this purpose on request and should be completed by the director of the laboratory requesting this approval. Inquiries regarding the registration of qualified medical technologists should be addressed to the Board of Registry of Medical Technologists, 611 W. Howard St., Post Office Box 1209, Muncie, Ind.

SCHOOLS FOR OCCUPATIONAL THERAPISTS

Through a cooperative liaison which began in 1933 on the request of the American Occupational Therapy Association, the Council has developed standards for the education of occupational therapists. These were initially adopted by the House of Delegates in 1935, and subsequent revisions have been approved in 1938 and 1949. Recommendations for periodic revisions of standards and on initial and continued approvals of schools are submitted to the Council by two advisory groups, the Advisory Committee on Occupational Therapy Education of the Council on Medical Education and Hospitals and the Council on Education of the American Occupational Therapy Association. The recently appointed advisory committee consists of nine physician members nominated by national organizations in the fields of chest diseases, general surgery, internal medicine, neurology, orthopedic surgery, pediatrics, physical medicine and rehabilitation, psychiatry, and medical education. In addition, there are three occupational therapist members nominated by the American Occupational Therapy Association and its educational secretary serves as a consultant. Surveys of schools are conducted by joint physician-therapist teams and submitted to the advisory groups which formulate recommendations for final action by the Council. Conferences and basic studies are being carried out by the American Occupational Therapy Association, with the assistance of other organizations, to further advance educational opportunities in the field.

As of June 30, 1957, there were 30 approved schools, 2 of which were on a stand-by basis during 1956. Statistics for total degree and certificate student enrollment and graduates for the academic years 1954-1955, 1955-1956, and 1956-1957 based upon data submitted to the American Occupational Therapy Association were as follows:

Academic Year (Sept. 1-Aug. 31)	Total Student Enrollment	Graduates
1954-1955	2,350	554
1955-1956	2,523	469
1956-1957	2,491	490

Training for an occupational therapist includes a good general collegiate education coordinated with theoretical and technical instruction in occupaapproved schools are available from the Council. Applicants should write directly to the Medical Record Librarian–Director of the School.

Schools conducting degree programs usually begin in June, and the majority of certificate programs admit students in September. Tuition ranges from $66 to several hundreds of dollars per year and one school requires none. Application for approval by a hospital or university should be made to the Council on Medical Education and Hospitals of the American Medical Association. Inquiries regarding career opportunities and registration of qualified medical record librarians should be addressed to the American Association of Medical Record Librarians, 510 N. Dearborn St., Chicago 10.

SCHOOLS FOR MEDICAL RECORD TECHNICIANS

Schools for medical record technicians are conducted to train the medical record technician who, working under the supervision of a qualified medical record librarian or a medical record committee, performs the technical tasks associated with the maintenance and custody of medical records.

As in the case of schools for medical record librarians, the Council has developed educational criteria for and evaluates schools in close collaboration with the American Association of Medical Record Librarians.

The training of medical record technicians should be conducted in acceptable general hospitals having a minimum of 4,000 annual admissions. These admissions should include an adequate distribution of patients in the various clinical services commonly found in general hospitals. Candidates for admission to an approved school should be proficient in typing and preferably also in shorthand. They should have completed the requirements for high school graduation or should have passed a college entrance examination for admission to an accredited college or university. The minimum length of training is nine months and should include theoretical instruction in anatomy, medical terminology, and medical records, with additional practical training in admitting and discharge procedures, indexing, preparation of reports, and other activities associated with the medical record department.

There are 10 hospitals approved by the Council for training medical record technicians. These schools reported a training capacity for 69 students with an enrollment of 55 students and 37 graduates in 1956. Data for 1955 are eight schools with a training capacity for 50 students, an enrollment of 35 and 28 graduates. Qualified high school graduates are accepted for courses of from 9-12 months' duration.

Hospitals should apply to the Council on Medical Education and Hospitals for approval. Special forms will be supplied for this purpose, and, when the required information has been received, the proposed training program will be reviewed in collaboration with the Committee on Education and Registration of the American Association of Medical Record Librarians. The institutions applying for Council approval will, in all instances, receive full information and every possible assistance in the planning and development of training programs in accordance with present standards. There continues to be an acute shortage of qualified medical record librarians and medical record technicians. Excellent opportunities exist for graduating students. Inquiries on career opportunities, registration, and accreditation of qualified medical record personnel should be addressed to the American Association of Medical Record Librarians, 510 North Dearborn St., Chicago 10.

SCHOOLS FOR MEDICAL TECHNOLOGISTS

In its continuing efforts to assist hospitals in the development of training programs for medical technologists, the Council cooperates closely with the American Society of Clinical Pathologists, the Board of Schools of Medical Technology, and the Board of Registry of the Society. The board of schools was established by the society in 1949 to serve as the major advisory body to the Council in all matters relating to standards and the evaluation of educational programs. Revisions of the standards occurred in 1941, 1943, 1947, 1949, and 1953. In 1956, the requirement for training in electrocardiographic technique was deleted from the curriculum in the "Essentials of an Acceptable School of Medical Technology." The Board and Council encourage that such training be continued when the pathologist-director considers it advisable.

The board of schools assists the Council in the evaluation of new applications and annual reevaluations of approved schools. A survey program is carried out by regional surveyors appointed by the board of schools. These pathologists visit all new schools and, in addition, periodically revisit approved schools. An extensive resurvey of existing educational programs is actively in progress by pathologists appointed by the board who make an invaluable contribution to the program in experience and time. The recommendations of the board on new applications and existing schools of medical technology are submitted to the Council for its consideration.

There are 656 schools presently approved by the Council, or an increase of 6% over the 618 approved as of Sept. 22, 1956. Enrollment increased 4% to 2,903 students in 1956 and the number of graduates was 2,140, which represents a 3% increase over 1955. With a student capacity of 4,796, the occupancy rate in 1956 was 61%. The increases in student enrollment and number of graduates reflect the effective recruitment program of the National Committee for Careers in Medical Technology sponsored by the College of American Pathologists, American in the field of physical therapy should be addressed to the American Physical Therapy Association, 1790 Broadway, New York 19.

SCHOOLS FOR X-RAY TECHNICIANS

The Council has been ably assisted by the American College of Radiology, the American Registry of X-ray Technicians, and the American Society of X-ray Technicians in revising criteria for training and evaluating educational programs in x-ray technology. These advisory groups participated in the most recent revision of the standards adopted by the House of Delegates in December, 1955. Particularly encouraged is progressive training in radiation therapy to afford students at least one month's practical experience intramurally or through affiliation.

Schools making application for approval are surveyed by state and regional councilors appointed by the American College of Radiology. Radiologists appointed by the College also periodically resurvey approved schools and these radiologists are currently revisiting approved schools. Their tremendous and voluntary contribution of time and experience are a major asset in the program. All data are evaluated by the Advisory Committee to the American Society of X-ray Technicians of the American College of Radiology and recommendations submitted to the Council for final action.

At present there are 517 schools approved by the Council for training x-ray technicians, which represents an increase of 13% over the 456 approved as of Sept. 22, 1956. Enrollment for 1956 increased 297, or 10%, to a total of 3,212 students. The training capacity increased 12% in 1956 over 1955 to a total of 3,974. Similarly, the number of graduates increased 8% to a total of 1,966 in 1956.

The minimum admission requirement is high school graduation. A total of 493 schools (almost 96%) admit students directly out of high school, 17 schools (3%) require one year of college, 6 schools (1%) require two years of college, and one school accepts only registered nurses.

The length of training in 285 (55%) is 24 months, 12 months in 152 (29%), 18 months in 55 (11%) and varies from 13, 14, 15, 36, and 48 months in the remaining 5% of approved schools. Tuition is required by 188 (36%) and 66% pay students a stipend. Collegiate affiliations have been established by 182 (35%) of approved schools. College credit is granted for training satisfactorily completed in the hospital training program in 11%, or 65 schools. Students should apply directly to the radiologist-director of an approved school. Lists are available from the Council on request.

Applications for approval of schools of x-ray technology should be submitted to the Council on Medical Education and Hospitals of the American Medical Association, 535 N. Dearborn St., Chicago 10. Inquiries regarding registration of qualified x-ray technicians should be addressed to the American Registry of X-Ray Technicians, Metropolitan Building, Minneapolis 1.

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ing sent on request, rather than having free distribution at booths. In fact, only 3 out of every 10 physicians answering wanted convention drug distribution. In contrast, a majority of physicians did want literature available at the exhibition booths.

Interestingly enough, these same doctors were asked why they came to the convention, and the objective of seeing the technical displays ranked a close second to hearing the papers and seeing the scientific exhibits.

It would seem that the majority of physicians, as well as the pharmaceutical exhibitors themselves, prefer that professional drug samples be distributed on a specific request basis. At the same time, however, the doctors desire the convention to have detailed literature available on all phases of a drug's pharmacology, and, in addition, they seek the opportunity to discuss a manufacturer's product with the company's professional representative. Adherence to such a convention drug sample program, while strictly voluntary, could result in a twofold accomplishment. First, unfortunate incidents of prescription-only drugs being indiscriminately available (either to a visitor at the convention, or by the doctor discarding his collection in his hotel before returning home) could be avoided. Second, and of more significance, a greater opportunity would be provided for the practitioner to secure sufficient data concerning a drug to know all of a drug's action, and reaction, before administration. There is mutual agreement between pharmaceutical houses and the medical profession that the doctor must satisfy himself as to a product's need and worth, rather than just rely on advertising.

LOOKING AHEAD

At the present time there are 78 approved four-year medical schools, 4 two-year schools of basic medical science, and 4 new four-year medical schools in various stages of development in the United States. By 1960 or 1961, if current developments proceed on schedule, there will be 83 four-year medical schools and 3 two-year schools of basic medical science in operation. Providing current enrollment trends are maintained, these institutions will by that time enroll somewhat over 30,000 medical students and graduate between 7,300 and 7,500 physicians annually. Currently several other medical school developments are under consideration but, at the moment, none have materialized to the point of definitive planning or action.

Up to the present time educational and service facilities in medicine have developed largely in response to local and state needs and desires. Fortunately, the facilities that have arisen in this fashion have kept pace, in general, with the immediate service demands of the public and the educational desires of well qualified students seeking medical careers. During recent years, however, significant events have occurred with resultant impacts on medical education and medical care which indicate the potential need for increased medical personnel as well as the faculty, facilities, and financing essential to their education and training.

Population estimates for the future indicate numbers in excess of those forecast by the most reliable population experts of a few decades ago. There has been a steadily increasing percentage of college-age youth entering institutions of higher education. Projections into the "sixties" indicate that colleges and universities face a deluge which will present challenges to every facet of our educational system. It is recognized that utilization of physician-population ratios as an index of physician needs is replete with fallacies. Modern transportation, improved means of communication, new diagnostic techniques and markedly more effective therapeutic approaches have created a world for the physician of today so different from the point of view of efficiency and effectiveness that unqualified statistical comparison of physician-population ratios with earlier years is relatively meaningless. The rising population tide, however, will inevitably witness the demand for augmented medical personnel.

The development of certain areas of specialization such as anesthesiology, radiology, and pathology, although laudable and desirable, removes increasing numbers of physicians from practice or the routine care of patients in the ordinary sense. Increasing numbers of physicians are being drawn into such fields as medical administration, industrial medicine and full-time research. The nature of medical practice itself changes as the population grows older and a relatively greater proportion of people reach the upper age brackets where increased needs for medical care arise. The very nature of entire specialty fields such as syphilology, urology, and otolaryngology has been altered significantly in a brief period of time through the development of new therapeutic weapons.

Thus the question as to "How many doctors are enough" is an increasingly complex question to answer in this rapidly changing scene. Nevertheless, American medicine faces the challenge of assuming a role of leadership in studying the current situations, evaluating current assets in medical education and their potentialities, and making every reasonable effort to forecast objectively as to the possible needs that lie ahead. Furthermore, these studies should be broad gauge and include objective evaluations of all the factors impinging on medical care today which carry implications as to future trends and needs in medical education. It is only through such an approach that it will be possible to maintain the role of leadership which American medicine should play in the stimulation, encouragement, and development of the educational facilities needed in this field in the years ahead.

MEDICAL NEWS

CALIFORNIA

Personal.—Dr. Malcolm H. Merrill, of Berkeley, director of the California Department of Public Health, has been appointed to the National Advisory Health Council, Surgeon General Burney of the Public Health Service has announced.

Conference on Cardiovascular Physiology.—A weekend conference on cardiovascular physiology as applied to clinical practice will be held in the Herbst Auditorium, Mt. Zion Hospital, San Francisco, Dec. 13-15. Presented by the visiting staff of the hospital, in cooperation with the University of California Medical Extension, the conference will present a broad survey of the present concepts of the dynamics of circulation as exhibited in cardiovascular disease. Emphasis will be placed on the need for understanding basic physiologic and biochemical disturbances for the successful diagnosis and management of cardiovascular disease. Dr. Lewis Dexter, assistant professor in medicine, Harvard Medical School, Boston, will be guest speaker. Dr. John J. Sampson, clinical professor of medicine, University of California School of Medicine, will serve as program chairman. Information and registration forms may be obtained by writing Dr. Seymour M. Farber, Head of Medical Extension, University of California Medical Center, San Francisco 22.

Dr. Loosli Appointed Dean.—The appointment of Dr. Clayton G. Loosli, professor of medicine and chief of the section of preventive medicine, University of Chicago, as dean of the University of Southern California School of Medicine, Los Angeles, has been announced. Winner of the Commonwealth Fund Senior Award for Support of Creative Research this year, Dr. Loosli will assume his duties as dean by July of next year. He succeeds Dr. Gordon E. Goodhart, who resigned as dean in March, 1956, to enter the private practice of psychiatry. Since that date, the School of Medicine has been directed by an Interim Administrative Committee under the chairmanship of Dr. Thomas H. Brem. Dr. Loosli is a consultant to the Communicable Disease Center of the U. S. Public Health Service, as well as a member of the Commission on Influenza and the Central Committee of the Armed Forces Epidemiological Board, Office of the Surgeon General (Army). He is a member of the Committee on Naval Medical Research and the Medical Fellowship Board of the National Academy of Sciences–National Research Council. He also serves on the Test Committee in Medicine, National Board of Medical Examiners; the Scientific Advisory Committee of the Common Cold Foundation; and the Advisory Committee on Research on Lung Cancer, American Cancer Society.

ILLINOIS

Dr. Baldwin Honored.—Dr. Arthur K. Baldwin, of Carrollton, was selected by the Illinois State Medical Society as "General Practitioner for 1958." A plaque emblematical of the honor as "family doctor" for the year will be presented to Dr. Baldwin at the society's annual meeting in Chicago next May. The selection was made "on the basis of Dr. Baldwin's 35 years as a country physician, his service to the medical profession, his war record and his community activities." Dr. Baldwin has been president of the Tuberculosis Sanatorium Board since its founding 10 years ago, and became charter president of the Lions Club in 1936.

INDIANA

Personal.—Dr. Clayton G. Weigand has been named director of the new medical administration division of Eli Lilly and Company, Indianapolis, and Dr. Sholom O. Waife has been appointed head of the medical editorial department.

State Medical Election.—The following officers of the Indiana State Medical Association have been elected: Dr. Kenneth L. Olson, South Bend, president-elect; Dr. Okla W. Sicks, Indianapolis, treasurer; and Dr. Richard P. Good, assistant treasurer. Dr. Malachi C. Topping was installed as president.

MAINE

Personal.—A special award by Colby Junior College, New London, N. H., was presented to Dr. Paul F. Russell, of North Edgecomb, for 34 years a malaria research expert with the Rockefeller Foundation, "in recognition of distinguished services which have contributed to the common good." The citation presented to Dr. Russell read in part, "For his leadership in combatting the disease of malaria and eliminating this scourge from many areas of the world. Dr. Russell has contributed to fundamental knowledge of malaria and has developed practical control measures suited to the rural tropics . . ."

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

MARYLAND

Personal.—Dr. Morris M. Cohen who has been associated with the Baltimore City Health Department Venereal Disease Bureau since 1948, has been appointed clinical director for the Division of Venereal Diseases.——Robert D. Coghill, Ph.D., director of research of Abbott Laboratories, North Chicago, Ill., has been appointed special assistant for industrial research at the Cancer Chemotherapy National Service Center, National Cancer Institute, Bethesda. In this position Dr. Coghill will be responsible for the industrial aspects of the national program of cancer chemotherapy research.

Physicians Meeting in Baltimore.—The Maryland-District of Columbia regional meeting of the American College of Physicians will be held Nov. 16 at the Chemical Hall, University of Maryland School of Medicine, Baltimore. Fifteen papers are scheduled for presentation at the morning and afternoon sessions. Dr. Maurice C. Pincoffs, past-president of the college, will present "Trends in Internal Medicine" following the luncheon meeting. Special guests include Dr. Ward W. Briggs, Dr. Leroy E. Burney, Dr. Lewis B. Flinn, General Silas B. Hays, M. C., U. S. Army; Admiral Bartholomew W. Hogan, M. C., U. S. Navy; Mr. Edward R. Loveland; Dr. Lemuel C. McGee; Dr. William S. Middleton; General Dan C. Ogle, M. C., U. S. Air Force; Dr. William S. Stone; Dr. Thomas B. Turner; Dr. W. Barry Wood Jr.; and Dr. Wallace M. Yater. Interested physicians, residents, and interns are invited. For information write The American College of Physicians, 4200 Pine St., Philadelphia 4.

MASSACHUSETTS

Personal.—Dr. Richard B. Cattell is recipient of the 1957 honor award given by the American Medical Writers' Association. Dr. Cattell is director, Lahey Clinic, and surgeon-in-chief, New England Baptist Hospital. The award, a plaque and gold medal, is given periodically to individuals "who have made distinguished contributions in writing, editing, publishing, or other means of communication in medicine."——Dr. Edwin L. Crosby, director, American Hospital Association, delivered the Charles F. Wilinsky Lecture for 1957 of the Harvard University School of Public Health recently on "The Hospital, Health Center of the Community."

Dr. C. A. Smith Receives Arvo Ylppö Medal.—The first Arvo Ylppö medal, honoring the founder of the modern practice of pediatrics in Finland, was awarded in Helsinki Oct. 26 to Dr. Clement A. Smith, associate professor of pediatrics, Boston Lying-In Hospital, The Children's Hospital, and Harvard Medical School, Boston. The occasion marked the 70th birthday of Dr. Ylppö, who is professor of pediatrics at Helsinki University. Dr. Smith was selected to receive the first gold medal for his basic research in the care of premature infants. Dr. Ylppö also received a gold medal in the ceremonies. The Arvo Ylppö Medal henceforth will be awarded every fifth year to both a Finnish and a foreign scientist, whose contributions must be international in importance and specialize in research dealing with prematurity. Subsequent medals will be struck in silver. The award has been established by four Finnish organizations: The Mannerheim League for Child Welfare; The Finnish Pediatric Association comprised of physicians specializing in pediatrics; the Foundation for Support of Pediatric Research; and the Orion Company, manufacturers of pharmaceuticals. Prior to receiving the Arvo Ylppö award, Dr. Smith, for three weeks, was visiting professor of pediatrics at the Medical School of the University of St. Andrews, Dundee, Scotland.

MINNESOTA

Establish Comfort Lectureship.—A lectureship in gastroenterology honoring Dr. Mandred W. Comfort has been established, the Mayo Association has announced. The project, which may include guest lectureships, visiting professorships, or other phases of graduate medical education, will be supported by a fund provided by Mrs. Comfort. To this fund will be added other sums from friends, former patients, and associates who ask that their gifts be devoted to a suitable memorial to the late physician, educator, scientist, and board member, "to advancement of the field of medicine to which he gave his professional life." The fund will be used under auspices of the Mayo Foundation for Medical Education and Research.

Personal.—The 10th annual Dr. Julius Friedenwald Memorial Lecture was delivered at the University of Maryland School of Medicine, Baltimore, Oct. 17 by Dr. Waltman Walters, of the department of surgery, Mayo Clinic, Rochester, Minn., on "Thirty Years Experience in the Treatment of Biliary Tract Lesions."——Dr. John B. Redford, Mayo Clinic, Rochester, received an award from the American Congress of Physical Medicine and Rehabilitation at its annual meeting in Los Angeles for his contribution on "The Effects of Breathing Exercises on Pulmonary Emphysema."——Dr. Walter A. Fansler, Minneapolis, director, department of proctology, University of Minnesota, has been chosen "Man of the Year" by the Phi Beta Pi National Medical Fraternity. Each year this organization selects one of its members for this honor. Dr. Fansler is a founder and past-president of the American Board of Proctology.——Dr. Charles Sheard, former head of the Section of Biophysics and Biophysical Research in the Mayo Clinic and Mayo Foundation, Rochester, received the Tillyer Medal of the Optical Society of America at its annual dinner Oct. 18.——Dr. Benjamin A. Weis has been elected president of the Charles T. Miller Hospital, St. Paul, succeeding Dr. Wallace P. Ritchie.

MISSISSIPPI

Society News.—The Mississippi Academy of General Practice has installed the following officers: Dr. John C. Longest, president; Dr. Addison T. Tatum, Petal, president-elect; Dr. Louis F. Rittelmeyer, Jackson, vice-president; and Dr. R. J. Moorhead, Yazoo City, secretary-treasurer.

Personal.—Dr. Arthur C. Guyton, chairman, department of physiology and biophysics, University of Mississippi Medical Center, delivered the annual William H. Vogt Lectureship sponsored by the Alpha Mu Chapter of Alpha Kappa Kappa of the Saint Louis University School of Medicine, Oct. 24, on "The Application of Basic Physical Principles to Medical Research."

NEW JERSEY

Beling Memorial Lecture.—Dr. Paul Victor Lemkau, Sc. D. (Hon.), professor, public health administration, division of mental hygiene, The Johns Hopkins University School of Hygiene and Public Health, Baltimore, will give the 11th annual C. C. Beling Memorial Lecture at the East Orange Veterans Administration Auditorium Nov. 20th under the auspices of the New Jersey Neuropsychiatric Association. The topic is "The Role of Psychiatry in Public Health Philosophy."

NEW YORK

Personal.—An honorary doctor of laws degree has been conferred on Dr. Herman E. Hilleboe, State Health Commissioner, during special ceremonies inaugurating the Institute of Health, Education, and Welfare at Adelphi College, Garden City, L. I. Dr. Hilleboe is chairman of the Joint Hospital Survey and Planning Commission, and the State Water Pollution and Air Pollution Control Boards; director of the American Heart Association; and trustee of the Nutrition Foundation.

New York City

Grant for Hospital Construction.—A $100,000 gift from the Lillia Babbitt Hyde Foundation has been made to New York University–Bellevue Medical Center. The gift will go toward the construction of a 19-story, 600-bed general hospital to replace the University Hospital located at 20th Street and Second Avenue. The new hospital will be on the Medical Center campus, and construction is due to begin in January, 1959. Gifts now totaling more than $400,000 have been received from the foundation since the Medical Center was formed in 1948. These contributions have gone toward research, fellowships, and equipment for New York University Post-Graduate Medical School, the New York Skin and Cancer Unit, and University Hospital, all of which are a part of University–Bellevue Medical Center. The $100,000 gift will go toward the five million dollar-for-dollar matching gift from the Samuel H. Kress Foundation which was announced last March at the opening of the campaign for a new hospital.

NORTH CAROLINA

Grants for Medical Research Facilities.—Duke University, Durham, has received two U. S. Public Health Service grants totaling $84,000 to expand and improve research laboratory facilities at the University's Medical Center. One grant of $42,000 will be used to expand the center's tissue culture laboratory for study of tumor-producing viruses. The other grant, also $42,000, will provide for the equipping of a new laboratory for physiological studies of pathogenic fungi. Both laboratories will be housed in the Bell Medical Research Building near Duke Hospital and are expected to be ready for use next spring. The expanded and improved tumor virus laboratory will occupy existing space in Bell Building. Present facilities for tumor virus research are housed in another part of the building.

OHIO

Society News.—The Mont Reid Surgical Society held its Third Triennial Home Meeting at the Cincinnati General Hospital, Oct. 11-12. Dr. Harvey Stone of Baltimore was the guest speaker at the annual banquet. New officers elected were as follows: Dr. Max M. Zinninger, president; Dr. Vinton E. Siler, president-elect; and Dr. James A. Helmsworth, secretary-treasurer.

PENNSYLVANIA

Dr. Chapman Honored.—Dr. Leroy E. Chapman, who is state senator and past-president of the Association of Physicians and Surgeons, Pennsylvania Railroad, has been awarded the decoration of the National Order "Carlos Finlay" by the President of the Republic of Cuba, Major General Fulgencio Batista y Zaldivar, "in recognition of . . . valuable assistance at the exercises held in commemoration of the One Hundredth Anniversary of the graduation of . . . Dr. Finlay from Jefferson Medical College in Philadelphia." The presentation was made in a ceremony at the Cuban Embassy Oct. 14 by Miguel Angel Campa, Ambassador of Cuba.

Philadelphia

Personal.—The appointment of Dr. Robert M. Bucher as associate dean of Temple University School of Medicine has been announced. Dr. Bucher, who is assistant professor of surgery at the university, was awarded the Master of Science degree in Surgery by the university in 1950 and was appointed to the faculty as instructor. He was subsequently appointed associate in 1956 and to assistant professor early this year. He is a fellow of the American College of Surgeons and a diplomate of the American Board of Surgery.

TEXAS

Personal.—Col. John W. Simpson, M. C., U. S. Army, chief of the obstetrics and gynecology service at Brooke Army Hospital, who retired from active military service Sept. 30, will become medical director of the Bexar County Hospital District.

Society News.—The Bexar County Medical Society attended a dinner meeting at the School of Aviation Medicine at Randolph Air Force Base, Oct. 22. The topic for discussion was the effects of diet on heart disease. The visiting speaker was Dr. Frederick J. Stare, head, department of nutrition, Harvard University Medical School, Boston. Col. Lawrence J. Milch, head, department of biochemistry, School of Aviation Medicine, discussed serum lipoproteins, the atherogenic index, and coronary artery disease; Dr. Lawrence E. Lamb, head, department of internal medicine, School of Aviation Medicine, "The Clinician and the Coronary Panic"; Dr. William F. Taylor, head, department of biometrics, "Statistical Reasoning Applied to Recent Work on the Causes of Atherosclerosis." Maj. Gen. Otis O. Benson Jr., commandant of the school, was host to the medical society. The program chairman was Lt. Col. Joseph M. Quashnock, head of the department of aviation medicine.

WISCONSIN

University News.—Dr. Walter Artelt, director of the Institute for the History of Medicine at University of Frankfurt on the Main, Germany, will join the University of Wisconsin Medical School faculty in February, 1958. Professor Artelt will teach History of Medicine as visiting professor in the Medical School.

Symposium on Radioisotopes.—The Milwaukee Academy of Medicine will present a symposium on radioisotopes at the Marquette University Brooks Memorial Union, Dec. 7. Object of the symposium, which will be moderated by Dr. Austin M. Brues, director, biology division, Argonne National Laboratory, is to present a discussion of radioisotopes—fundamental information with medical orientation. Discussion topics include the following:

Basic cellular and histologic changes produced by radiation energy, Dr. William Bloom, professor of anatomy, University of Chicago.
Radioisotope chemistry, Dr. Edward A. Doisy, Jr., associate professor of internal medicine, St. Louis University School of Medicine.
Basic nuclear physics and instruments, Titus C. Evans, Ph.D., professor of radiation research, State University of Iowa College of Medicine.
Radioisotope pharmacology, Dr. Eugene M. K. Geiling, professor of pharmacology, University of Chicago.
Basic radiation biology, Harvey M. Patt, Ph.D., senior physiologist, Argonne National Laboratory.
Radioisotope physiology, Dr. Joseph F. Ross, professor of medicine and associate dean, University of California School of Medicine, San Francisco.

Physicians are welcome; there is no registration fee. For information write the Milwaukee Academy of Medicine, 561 North 15th St., Milwaukee 3, Wis.

GENERAL

Western Surgical Meeting.—The 65th annual meeting of the Western Surgical Association will be held Nov. 21-23 at the Hotel Utah, Salt Lake City. Thirty-six papers are scheduled for presentation. A preliminary conference session includes the following topics and speakers:

Right Atrial Pressure as an Index of Blood Volume Change, Drs. Russell M. Nelson and John Gary Maxwell.
Genetic Aspects of Intestinal Polyps, Dr. Ralph C. Richards.
Pyrogenic Contamination of Parenteral Solutions, Dr. Stanley Marcus.
The Vomiting Center, Dr. Petter Lindstrom.
Splenectomy: Indications, Complications, Results, Dr. George Cartwright.
Bacterial Invasion in Burn Wounds, Dr. Philip B. Price.
Dysfunctional Uterine Bleeding, Dr. Emil Holmstrom.
Influence of Steroid Hormones on Inflammation, Dr. Thomas Dougherty.

The president's address, "The Past, Present, and Future of the Western Surgical Association," will be given Nov. 22 by Dr. Everett P. Coleman, Canton, Ill. The annual dinner will be held Nov. 22. Entertainment includes an organ recital at the Mormon Tabernacle and a tour of Big Cottonwood Canyon. A special ladies' program is arranged. For information write The Western Surgical Association, Dr. John T. Reynolds, Secretary, 612 North Michigan Ave., Chicago 11.

Essay Contest for Original Research.—The American Society of Maxillofacial Surgeons announces an essay contest for papers based on some original research (either clinical or experimental) in maxillofacial surgery. Any medical graduate may enter the contest. The essays shall be based on work not previously published even in part, and shall be submitted in triplicate, in English only, and not more than 4,000 words in length. Manuscripts will not be accepted by the Award Committee after April 1, 1958, and should be sent by registered mail. Certificates will be given to the authors of the first and second prize essays. The winners of these certificates will receive $300 and $200, respectively, for traveling expenses. The two winning papers are to be read by the authors before the annual convention of the American Society of Maxillofacial Surgeons, May 11-15, 1958, in Boston.

Information may be obtained from the secretary of the society, Dr. Orion H. Stuteville, 700 N. Michigan Ave., Chicago 11.

Chest Physicians Meet in Philadelphia.—An interim session of the American College of Chest Physicians will be held Dec. 2-3 at the Warwick Hotel, Philadelphia. The program includes 10 papers followed by open discussions. Two panel discussions are planned: "The Management of Pulmonary Emphysema," moderated by Dr. R. Drew Miller, instructor in medicine, University of Minnesota Graduate Medical School, Rochester, and "The Evaluation of Cardiac Disability," moderated by Dr. Coleman B. Rabin, assistant clinical professor of medicine, Columbia University College of Physicians and Surgeons, New York City. The following four round-table luncheons are scheduled: present and future developments in heart surgery, long-term results of chemotherapy in tuberculosis, anticoagulant therapy in acute and chronic coronary heart disease, and inhalation therapy. Fourteen fireside conferences will be held. Guest speaker at the annual dinner will be Mr. Robert K. Bell, Ocean City, N. J., who will speak on "The Challenge to the Medical and Legal Professions." For information write the American College of Chest Physicians, 112 Chestnut St., Chicago 11.

Fellowship in Medical Neoplasia.—The Memorial Center for Cancer and Allied Diseases, New York City, announces a special fellowship in medical neoplasia. Purpose of the fellowship is (1) to offer the physician trained in internal medicine the opportunities available at Memorial Center to study the natural history, diagnosis, complications, pathogenesis and pathologic physiology, pathology, and treatment of cancer, with particular emphasis on the leukemias, lymphomas, and allied diseases, and (2) to undertake an active supervised clinical investigation of interest to the service and the fellow in the field of medical neoplasia (nonsurgical cancer and palliative therapy of patients with malignant tumors). The study is to be carried out at Memorial Center under the aegis of the Medical Neoplasia Service of the Department of Medicine. Candidates must be graduates of recognized A. M. A. approved medical schools, and must have completed or be in process of completing two years of postgraduate training in internal medicine in addition to one year of internship. Such training may be formal residency or its equivalent. The salary stipend is $6000 per annum without maintenance. The appointment is for one year normally beginning July 1, renewable for one or two years for individuals who develop special interest in some problem. Applicants should apply in writing to Dr. Lloyd F. Craver, Chief, Medical Neoplasia Service, Memorial Center for Cancer and Allied Diseases, 444 E. 68th St., New York 21.

EXAMINATIONS AND LICENSURE

MEDICAL SPECIALTY BOARDS

American Board of Dermatology: *Written.* Several Cities, June 30. *Oral.* Detroit, Oct. 17-19. Final date for filing all applications is April 1. Sec., Dr. Beatrice Maher Kesten, One Haven Ave., New York 32.

American Board of Internal Medicine: *Written.* Oct. 20, 1958. *Oral.* New Orleans, Feb. 4-7; Philadelphia, April 23-26; San Francisco, June 18-21; Chicago, Oct. 13-16. Exec. Sec.-Treas., Dr. William A. Werrell, One West Main St., Madison 3, Wis.

American Board of Neurological Surgery: Examination given twice annually, in the spring and fall. In order to be eligible a candidate must have his application filed at least six months before the examination time. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, St. Louis 10.

American Board of Obstetrics and Gynecology. Various locations in the United States and Canada. *Part I.* Jan. 2. *Part II.* Chicago, May 7-17. Final date for filing application was September 1. Sec., Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Written.* January 1958. Final date for filing application was July 1. Secy., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland 9, Maine.

American Board of Orthopaedic Surgery: *Part I.* April 3-4, Rochester, Minnesota, Denver, Colorado, Washington, D. C. Final date for filing application is Nov. 30. *Part II.* New York City, Jan. 29-31, 1958. Sec., Dr. Sam W. Banks, 116 South Michigan Avenue, Chicago 3.

American Board of Otolaryngology: *Oral.* Chicago, Oct. 6-10. Final date for filing application is March. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: *Oral and Written.* San Francisco, June 30-July 2. Sec., Dr. Edward B. Smith, Indiana University Medical Center, 1042-1232 W. Michigan St., Indianapolis 7.

American Board of Physical Medicine and Rehabilitation: *Oral and Written.* Peoria, Ill., June 20-21. Final date for filing application is Feb. 1. Sec., Dr. Earl C. Elkins, 200 First St., S. W., Rochester, Minn.

American Board of Proctology: *Oral and Written, Parts I and II.* September 1958. Final date for filing application is March 15. Sec., Dr. Stuart T. Ross, 520 Franklin Ave., Garden City, N. Y.

American Board of Psychiatry and Neurology: *Oral.* San Francisco, March 17-18. Final date for filing application is Dec. 17. Sec., Dr. David A. Boyd, Jr., 102-110 2nd Ave., S. W., Rochester, Minn.

American Board of Radiology: Chicago, May 20-24. Final date for filing application is Jan. 1. Sec., Dr. H. Dabney Kerr, Kahler Hotel Bldg., Rochester, Minn.

American Board of Surgery: *Part II.* Indianapolis, Nov. 18-19; Cincinnati, Dec. 16-17; New Orleans, Jan. 13-14; Durham, N. Car., Feb. 10-11; Baltimore, March 10-11; Chicago, May 12-13; Los Angeles, June 16-17 and Portland, Oregon, June 20-21. Sec., Dr. John B. Flick, 225 So. 15th St., Philadelphia 2.

Board of Thoracic Surgery: *Written.* Various centers throughout the country, February 1958. Final date for filing application is December 1. Sec., Dr. William M. Tuttle, 1151 Taylor Avenue, Detroit 2, Mich.

American Board of Urology: *Written examination.* Various cities throughout the country. *Pathology and Oral Clinical.* February 1958. Location not decided. Exec. Secretary, Mrs. Ruby L. Griggs, 30 Westwood Road, Minneapolis 16.

professor of otorhinolaryngology at the New York University College of Medicine and the New York University Post-Graduate Medical School; on the staff of the Manhattan Eye, Ear and Throat Hospital; died Sept. 6, aged 48, of coronary thrombosis and arteriosclerosis.

Weissman, Max, New York City; Medizinische Fakultät der Universität, Vienna, Austria, 1921; member of the Medical Society of the State of New York; fellow of the American Psychiatric Association; specialist certified by the American Board of Psychiatry and Neurology; clinical associate professor of psychiatry at the State University of New York College of Medicine in Brooklyn, where he was on the staff of the Kings County Hospital; died in the Grace–New Haven Hospital in New Haven, Conn., Aug. 24, aged 62.

Block, William Henry, New Orleans; University of Maryland School of Medicine, Baltimore, 1895; an associate member of the American Medical Association and in 1922-1923 member of the House of Delegates; member of the Louisiana State Medical Society; veteran of the Spanish–American War; served as president of the Orleans Parish Medical Society; died in the Veterans Administration Center Hospital, Jackson, Aug. 28, aged 83, of bronchopneumonia.

Conolly, Joseph Bartholomew, Glen Cove, N. Y.; Long Island College Hospital, Brooklyn, 1909; member of the Medical Society of the State of New York; fellow of the American College of Surgeons; police surgeon; for many years medical inspector for the school system and health officer of Glen Cove; associated with Nassau County Tuberculosis Hospital in Farmingdale; died in St. Francis Hospital and Sanatorium for Cardiac Children, Roslyn, Sept. 13, aged 71.

Longshore, Walter Eugene Jr. ⊕ Orange, N. J.; Howard University College of Medicine, Washington, D. C., 1934; specialist certified by the American Board of Radiology; member of the American College of Radiology; certified by the National Board of Medical Examiners; associated with the Martland Medical Center in Newark; courtesy staff member at New Jersey Orthopaedic Hospital and the Orange Memorial Hospital, where he died Aug. 26, aged 49, of a heart attack.

Peeler, Clarence N. ⊕ Charlotte, N. C.; North Carolina Medical College, Davidson, 1906; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; past-president of the Mecklenberg County Medical Society; served on the faculty of his alma mater; for many years trustee, Wake Forest (N. C.) College; associated with Charlotte Eye, Ear and Throat Hospital and Charlotte Memorial Hospital, where he died Aug. 27, aged 78.

Strachauer, Arthur Clarence ⊕ Minneapolis; born in Minneapolis May 1, 1884; University of Minnesota College of Medicine and Surgery, Minneapolis, 1908; member of the founders group of the American Board of Surgery; clinical professor emeritus of surgery at his alma mater; member of the Western Surgical Association and the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; died in the Doctors Memorial Hospital Aug. 23, aged 73.

Baber, Kenneth P., Los Angeles; California Eclectic Medical College, Los Angeles, 1915; died Aug. 31, aged 71, of a heart attack.

Barksdale, Elisha ⊕ Lynchburg, Va.; Medical College of Virginia, Richmond, 1904; fellow of the American College of Surgeons; associated with the Lynchburg General Hospital, Guggenheimer Memorial Hospital, and the Virginia Baptist Hospital, where he died Sept. 13, aged 76, of arteriosclerosis and cerebral thrombosis.

Baum, Albert, New York City; Medizinische Fakultät der Universität, Vienna, Austria, 1912; died July 30, aged 71, of cancer of the stomach.

Black, James Henry, Montgomery, Ala.; Medical College of Alabama, Mobile, 1905; died Aug. 30, aged 78, of heart disease.

Bobb, Edward Clyde ⊕ Mitchell, S. D.; Northwestern University Medical School, Chicago, 1943; member of the American Academy of General Practice; associated with Methodist Hospital; died in Minneapolis Sept. 5, aged 44.

Breen, John ⊕ Schroon Lake, N. Y.; Albany (N. Y.) Medical College, 1906; served as health officer of the towns of Schroon, North Hudson, and Minerva; past-president of the Essex County Medical Society; formerly county coroner; died Sept. 7, aged 78, of a heart attack.

Cahill, John Donald ⊕ New York City; Georgetown University School of Medicine, Washington, D. C., 1932; fellow of the American College of Chest Physicians; associated with Seton, St. Joseph's, St. Elizabeths, Union, and Fordham hospitals, and Westchester Square Hospital, where he died Sept. 13, aged 50.

Carson, James, Calhoun, Ga.; (licensed in Georgia in 1934); died in the Gordon County Hospital, Sept. 10, aged 94.

Cowell, Katherine Rebecca Sherk ⊕ Carlisle, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1910; on the staff of the Carlisle Hospital, where she died Sept. 21, aged 69, of hypertensive cardio renal disease.

De Jarnette, Joseph S. ⊕ Staunton, Va.; Medical College of Virginia, Richmond, 1888; member of the American Psychiatric Association; served as

DEATHS

Ferris, Eugene Beverly ⊕ New York City; born in McNeill, Miss., June 24, 1905; University of Virginia Department of Medicine, Charlottesville, 1930; from 1946 to 1952 he was successively instructor, assistant professor, associate and full professor at the University of Cincinnati College of Medicine, where he was also director of the Commonwealth Fund Psychosomatic Teaching Project; served as a member of the directing staff, Cincinnati General and Holmes hospitals, and also of the visiting staff, Bethesda Hospital; formerly chairman, department of medicine, Emory University School of Medicine in Atlanta, where he was chief, medical service, Grady Memorial and Emory University hospitals and consultant and member, dean's committee, Veterans Administration Hospital; past-president, vice-president, and member of the council, American Society for Clinical Investigation; past-president, past-secretary, and member of the council of the American Psychosomatic Society; member of the Association of American Physicians, Central Society for Clinical Research, American Clinical and Climatological Association, Sigma Xi, Alpha Omega Alpha, and Phi Beta Pi; fellow of the American College of Physicians and was currently serving his second term as a member of the board of regents; fellow of the American Association for the Advancement of Science; consultant in mental health and member of the committee on research of the mental hygiene council, U. S. Public Health Service, from 1946 to 1951, and the following year became a member of the cardiovascular study section; in 1948 member of the medical teaching mission to Poland and Finland, sponsored by Unitarian Service Committee and the World Health Organization; director of the research project on aviation medicine for Office of Scientific Research and Development, from 1942 to 1945; member of the subcommittee on decompression sickness, National Research Council from 1942 to 1946; in 1936 received the John Horsley Memorial Prize, University of Virginia, Charlottesville; medical director and past-vice-president of the American Heart Association; editor of the *Cincinnati Journal of Medicine* from 1945 to 1947, and of the *Journal of Clinical Investigation* from 1947 to 1952, when he became a member of the editorial board; served as a member of the editorial board of the *Journal of Laboratory and Clinical Medicine;* died Sept. 26, aged 52, of a heart attack.

Ackemann, Harry William ⊕ Rockford, Ill.; Northwestern University Medical School, Chicago, 1909; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; past-president of the Illinois Radiological Society; associated with Rockford Memorial and Swedish American hospitals, where he was past-president of the staffs; on the staffs of the Deaconess Hospital in Freeport and the Highland Hospital in Belvidere; died Sept. 18, aged 72, of carcinoma of the rectum.

Gambee, Louis Phaon ⊕ Portland, Ore.; Rush Medical College, Chicago, 1921; associate clinical professor of surgery at the University of Oregon Medical School; for many years member of the state public welfare commission; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; past-president of the Pacific Coast Surgical Society and the North Pacific Surgical Society; formerly vice-president of the Oregon State Medical Society; on the staffs of St. Vincent's Hospital and the Providence Hospital, where he died Sept. 8, aged 65.

McNeill, Clyde ⊕ Louisville, Ky.; Johns Hopkins University School of Medicine, Baltimore, 1920; associate professor of radiology at the University of Louisville School of Medicine; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; veteran of World Wars I and II; consultant, Veterans Administration Hospital; associated with the Norton Memorial Infirmary and SS Mary and Elizabeth Hospital; author of "Roentgen Technique"; died Aug. 25, aged 63, of coronary disease.

Bickmore, Harold Vincent, Portland, Maine; Medical School of Maine, Portland, 1914; member of the Maine Medical Association; fellow of the American College of Physicians; specialist certified by the American Board of Internal Medicine; veteran of World War I; county physician; formerly member of the school committee; medical director of the Associated Hospital Service of Maine; on the staffs of the Maine Eye and Ear Infirmary and the Maine General Hospital; died in Cape Elizabeth Sept. 9, aged 68, of coronary disease.

Feher, Alexander, New York City; Medizinische Fakultät der Universität, Vienna, Austria, 1932; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Otolaryngology; assistant

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⊕ Indicates Member of the American Medical Association.

professor of otorhinolaryngology at the New York University College of Medicine and the New York University Post-Graduate Medical School; on the staff of the Manhattan Eye, Ear and Throat Hospital; died Sept. 6, aged 48, of coronary thrombosis and arteriosclerosis.

Weissman, Max, New York City; Medizinische Fakultät der Universität, Vienna, Austria, 1921; member of the Medical Society of the State of New York; fellow of the American Psychiatric Association; specialist certified by the American Board of Psychiatry and Neurology; clinical associate professor of psychiatry at the State University of New York College of Medicine in Brooklyn, where he was on the staff of the Kings County Hospital; died in the Grace–New Haven Hospital in New Haven, Conn., Aug. 24, aged 62.

Block, William Henry, New Orleans; University of Maryland School of Medicine, Baltimore, 1895; an associate member of the American Medical Association and in 1922-1923 member of the House of Delegates; member of the Louisiana State Medical Society; veteran of the Spanish-American War; served as president of the Orleans Parish Medical Society; died in the Veterans Administration Center Hospital, Jackson, Aug. 28, aged 83, of bronchopneumonia.

Conolly, Joseph Bartholomew, Glen Cove, N. Y.; Long Island College Hospital, Brooklyn, 1909; member of the Medical Society of the State of New York; fellow of the American College of Surgeons; police surgeon; for many years medical inspector for the school system and health officer of Glen Cove; associated with Nassau County Tuberculosis Hospital in Farmingdale; died in St. Francis Hospital and Sanatorium for Cardiac Children, Roslyn, Sept. 13, aged 71.

Longshore, Walter Eugene Jr. ⊕ Orange, N. J.; Howard University College of Medicine, Washington, D. C., 1934; specialist certified by the American Board of Radiology; member of the American College of Radiology; certified by the National Board of Medical Examiners; associated with the Martland Medical Center in Newark; courtesy staff member at New Jersey Orthopaedic Hospital and the Orange Memorial Hospital, where he died Aug. 26, aged 49, of a heart attack.

Peeler, Clarence N. ⊕ Charlotte, N. C.; North Carolina Medical College, Davidson, 1906; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; past-president of the Mecklenberg County Medical Society; served on the faculty of his alma mater; for many years trustee, Wake Forest (N. C.) College; associated with Charlotte Eye, Ear and Throat Hospital and Charlotte Memorial Hospital, where he died Aug. 27, aged 78.

Strachauer, Arthur Clarence ⊕ Minneapolis; born in Minneapolis May 1, 1884; University of Minnesota College of Medicine and Surgery, Minneapolis, 1908; member of the founders group of the American Board of Surgery; clinical professor emeritus of surgery at his alma mater; member of the Western Surgical Association and the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; died in the Doctors Memorial Hospital Aug. 23, aged 73.

Baber, Kenneth P., Los Angeles; California Eclectic Medical College, Los Angeles, 1915; died Aug. 31, aged 71, of a heart attack.

Barksdale, Elisha ⊕ Lynchburg, Va.; Medical College of Virginia, Richmond, 1904; fellow of the American College of Surgeons; associated with the Lynchburg General Hospital, Guggenheimer Memorial Hospital, and the Virginia Baptist Hospital, where he died Sept. 13, aged 76, of arteriosclerosis and cerebral thrombosis.

Baum, Albert, New York City; Medizinische Fakultät der Universität, Vienna, Austria, 1912; died July 30, aged 71, of cancer of the stomach.

Black, James Henry, Montgomery, Ala.; Medical College of Alabama, Mobile, 1905; died Aug. 30, aged 78, of heart disease.

Bobb, Edward Clyde ⊕ Mitchell, S. D.; Northwestern University Medical School, Chicago, 1943; member of the American Academy of General Practice; associated with Methodist Hospital; died in Minneapolis Sept. 5, aged 44.

Breen, John ⊕ Schroon Lake, N. Y.; Albany (N. Y.) Medical College, 1906; served as health officer of the towns of Schroon, North Hudson, and Minerva; past-president of the Essex County Medical Society; formerly county coroner; died Sept. 7, aged 78, of a heart attack.

Cahill, John Donald ⊕ New York City; Georgetown University School of Medicine, Washington, D. C., 1932; fellow of the American College of Chest Physicians; associated with Seton, St. Joseph's, St. Elizabeths, Union, and Fordham hospitals, and Westchester Square Hospital, where he died Sept. 13, aged 50.

Carson, James, Calhoun, Ga.; (licensed in Georgia in 1934); died in the Gordon County Hospital, Sept. 10, aged 94.

Cowell, Katherine Rebecca Sherk ⊕ Carlisle, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1910; on the staff of the Carlisle Hospital, where she died Sept. 21, aged 69, of hypertensive cardio renal disease.

De Jarnette, Joseph S. ⊕ Staunton, Va.; Medical College of Virginia, Richmond, 1888; member of the American Psychiatric Association; served as superintendent of the Western State Hospital and as physician in charge of the De Jarnette State Sanatorium; died Sept. 3, aged 90, of arteriosclerosis.

Delehanty, Edward Thomas, Albany, N. Y.; Albany (N. Y.) Medical College, 1917; for many years county jail physician; on the staff of the Albany Hospital; died Sept. 4, aged 64, of arteriosclerosis.

Deming, Horatio S., West Palm Beach, Fla.; Bellevue Hospital Medical College, New York City, 1892; died in St. Mary's Hospital July 16, aged 87.

Doyle, Chauncey Jay, Grafton, Wis.; Marquette University School of Medicine, Milwaukee, 1925; service member of the American Medical Association; veteran of World War II; served as physician at the Veterans Administration regional office in Milwaukee; died in the Veterans Administration Hospital, Wood, Aug. 25, aged 59, hypertensive cardiovascular disease.

Enfield, Thomas Walter ⊕ Trenton, N. J.; Hahnemann Medical College of Philadelphia, 1923; died in Atlantic City Aug. 31, aged 60, of coronary occlusion.

Eppstein, Ralph Morris, Chicago; Chicago College of Medicine and Surgery, 1911; died Sept. 7, aged 76, of carcinoma of the rectum.

Fleck, Roland Friederick ⊕ Mahanoy City, Pa.; Jefferson Medical College of Philadelphia, 1920; veteran of World War I; since 1952 a medical examiner for commercial pilots under Civil Aeronautics Administration; associated with the Ashland (Pa.) State Hospital, Pottsville (Pa.) Hospital and Wills Eye Hospital in Philadelphia; died in Pocono Pines Aug. 25, aged 63, of coronary occlusion.

Genung, Mabel Amanda, Yarnell, Ariz.; College of Physicians and Surgeons, Los Angeles, 1911; died in the Good Samaritan Hospital, Phoenix, Aug. 27, aged 82.

Glasgow, Robert S. ⊕ Adamsville, Ala.; University of the South Medical Department, Sewanee, Tenn., 1900; died Aug. 17, aged 82, of acute coronary disease.

Glatfelter, Harvey Edward, Central City, Neb.; University of Maryland School of Medicine, Baltimore, 1891; also a dentist; died in the Hord Memorial Hospital Aug. 26, aged 88, of arteriosclerotic heart disease.

Guernsey, Paul Francis, Glendale, Calif.; Vanderbilt University School of Medicine, Nashville, Tenn., 1913; veteran of World Wars I and II; died Aug. 21, aged 69, of diabetes mellitus.

Hargens, Charles William, Hot Springs, S. D.; Northwestern University Medical School, Chicago, 1891; fellow of the American College of Surgeons; served on the staffs of Our Lady of Lourdes Hospital and Lutheran Hospital; died Aug. 23, aged 91, of carcinoma of the sigmoid.

Hayes, Henry Homer ⊕ Honolulu, Hawaii; Cooper Medical College, San Francisco, 1906; died in the Queen's Hospital Aug. 14, aged 76.

Healey, Thomas Vincent ⊕ Worcester, Mass.; Harvard Medical School, Boston, 1943; specialist certified by the American Board of Surgery; certified by the National Board of Medical Examiners; fellow of the American College of Surgeons; on the staffs of the Belmont Hospital and Worcester City Hospital, where he died Aug. 26, aged 40, of nephrosclerosis and diabetes mellitus.

Hines, Sidney Jurry Truley, Tahlequah, Okla. (licensed in Oklahoma by years of practice); an associate member of the American Medical Association; one of the founders of the City Hospital, where he died Aug. 26, aged 86, of coronary occlusion.

Horsley, Henry Lee ⊕ Boaz, Ala.; University of Nashville (Tenn.) Medical Department, 1904; died Aug. 31, aged 82.

Junkin, Samuel Presley ⊕ Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1908; medical superintendent of the Granite Mountain Hospital which he owned; died Aug. 22, aged 79, of cerebral thrombosis.

Kennedy, Herbert Bradley ⊕ Omaha; Emory University School of Medicine, Atlanta, 1917; member of the Industrial Medical Association and the American Trudeau Society; attached to the British Royal Medical Corps during World War I; served as medical director of the Woodmen of the World Life Insurance Company; died Aug. 22, aged 62, of cholelithiasis.

Kuhl, Augustus Bernard ⊕ Davenport, Iowa; University of Nebraska College of Medicine, Omaha, 1903; past-president of the Scott County Medical Society; associated with St. Luke's Hospital and the Mercy Hospital, where he died Aug. 29, aged 79, of cerebral thrombosis.

Lenthall, Theresa Ulla, Parma, Ohio; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, 1925; service member of the American Medical Association; associated with the Veterans Administration; died in the University Hospitals, Cleveland, July 4, aged 58, of carcinomatosis.

Leto, Carmelo, New York City; Regia Università di Napoli Facolta Medicina e Chirurgia, Italy, 1906; died July 10, aged 78, of coronary thrombosis.

Luessman, Harold William ⊕ Chicago; Loyola University School of Medicine, Chicago, 1923; served on the staff of St. Francis Hospital, Evanston, Ill., where he died Sept. 14, aged 58, of hepatic failure due to portal cirrhosis of the liver.

McBurney, George Franklin, Belmond, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1896; died in Lake Worth, Fla., July 1, aged 87, of cerebral hemorrhage.

McConnell, Charles Asa, Hot Springs National Park, Ark.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; died Aug. 16, aged 89.

McCoy, Walter Reynolds ⊕ Folkston, Ga.; Atlanta College of Physicians and Surgeons, 1910; veteran of World War I; formerly state senator; member of the city council; died in the Georgia Baptist Hospital, Atlanta, Aug. 31, aged 70, coronary thrombosis and infarction of the myocardium.

McKinney, Mark Ward ⊕ Seattle; Willamette University Medical Department, Salem, Ore., 1908; fellow of the American College of Surgeons; on the staffs of the Seattle General, Doctors, and Columbus hospitals; died Aug. 17, aged 80.

Mankovich, Eugene ⊕ Lakewood, Ohio; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1923; served in the Austro-Hungarian Army in World War I; county jail physician; on the staffs of St. Vincent Charity Hospital, St. John's Hospital, and the Lutheran Hospital, Cleveland, where he died Aug. 24, aged 63, of carcinoma of the right lung with metastasis.

Mears, Robert Fuller ⊕ Northfield, Minn.; University of Minnesota Medical School, Minneapolis, 1939; member of the American Academy of General Practice; staff member, Northfield City Hospital; died while attending a stag dinner party on a barge cruising Lake Byllesby near Randolph Aug. 26, aged 45, as the result of strangulation by choking on a piece of steak.

Murphy, Leo Thomas ⊕ Poughkeepsie, N. Y.; University of Minnesota Medical School, Minneapolis, 1920; fellow of the American College of Surgeons; consultant, Matteawan State Hospital in Beacon, North Dutchess Health Center in Rhinebeck, Vassar Brothers, and St. Francis hospitals; died Aug. 24, aged 64, of acute coronary thrombosis.

Myers, Edmund, St. Petersburg, Fla.; Jefferson Medical College of Philadelphia, 1908; an associate member of the American Medical Association; member of the Massachusetts Medical Society; formerly practiced in Boston, where he was on the staff of the Massachusetts Memorial Hospital; veteran of World War I; member of the staff of Mound Park Hospital; died in St. Anthony's Hospital Sept. 4, aged 73, of uremia.

Nacrelli, Vincent Anthony ⊕ Chester, Pa.; Georgetown University School of Medicine, Washington, D. C., 1941; at one time councilman in Marcus Hook; coroner's physician in Delaware County; on the staffs of the Sacred Heart Hospital and the Chester Hospital, where he died Sept. 2, aged 42, of coronary artery disease.

Raihala, John, Sarasota, Fla.; Chicago College of Medicine and Surgery, 1908; for many years practiced in Virginia, Minn.; died at Tower, Minn., Aug. 19, aged 76, of carcinoma of the lung.

Rhodes, Robert E. Lee, Tulsa, Okla.; Southwestern University Medical College, Dallas, Texas, 1905; an associate member of the American Medical Association; associated with the Hillcrest Hospital, where he died Aug. 31, aged 81.

Seidenstein, Jacob Joseph, New York City; Long Island College Hospital, Brooklyn, 1914; veteran of World War I; died in the Veterans Administration Hospital Aug. 13, aged 65, of carcinoma of the prostate.

Sibley, Charles T., New York City; New York Homeopathic Medical College and Hospital, New York City, 1905; died in Oradell, N. J., Sept. 4, aged 82, of pulmonary edema, arteriosclerotic heart disease, and lymphoma.

Smith, James Laurence, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; served as managing director of the Illinois Eye and Ear Infirmary and as managing officer of the Jacksonville (Ill.) State Hospital; died Sept. 11, aged 75, of acute myocardial infarction.

Surbaugh, Ross Dairrel ⊕ Dublin, N. C.; University of Cincinnati College of Medicine, 1951; veteran of World War II; died Sept. 8, aged 39.

Tulgan, Joseph ⊕ Brooklyn; University and Bellevue Hospital Medical College, New York City, 1929; associated with the Coney Island Hospital; veteran of World War I; died in the Holy Name Hospital at Teaneck, N. J., Sept. 16, aged 60.

Uhlemeyer, Henry Adolph ⊕ St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1900; on the staff of the Christian Hospital, where he died Sept. 8, aged 79, of myocardial infarction.

Wallace, Andrew Lee, Los Angeles; Boston University School of Medicine, 1919; died Aug. 18, aged 67, of arteriosclerosis.

Watkins, Barton Hiram, Hobart, Okla.; St. Louis University School of Medicine, 1916; an associate member of the American Medical Association; died in Oklahoma City Aug. 23, aged 68, of rheumatic heart disease.

West, William Daniel ⊕ Belleville, Ill.; St. Louis College of Physicians and Surgeons, 1893; member of the Missouri State Medical Association; died Aug. 24, aged 87.

FOREIGN LETTERS

BRAZIL

Spondylarthritis.—Dr. Nelson Carvalho (*Revista do Hospital das clínicas, são Paulo,* vol. 12, 1957) reported the results obtained with radiotherapy in 515 patients with spondylarthritis. In this series 83% of the patients were clinically cured or improved.

Morbidity in Goiaz.—A report of the health department in the state of Goiaz for 1956 indicates a malarial morbidity of 54%. This rate is considered satisfactory, since the data from which it is derived are of a control program, and the persons checked were suspected to be infected; 4,640 newborn infants from the city of Goiania were examined, but none had malaria. Of 8,569 homes visited, only 111 were found to harbor malarial vectors. The species Anopheles darlingi and Anopheles albitarsis are the principal vectors in the state. In 502 localities 28,338 sick persons received treatment, 108,242 antimalarial tablets being used; 868,444 tablets were delivered to private and official institutions. Three counties were surveyed for Brazilian trypanosomiasis. A rate of 1.41 Triatomas per house was found. Panstrongylus megistus, Panstrongylus infestans, and Triatoma sordida were the species found, and the rate of natural infection was 15.5%. The extensive use of vaccination afforded complete protection against yellow fever. A high incidence (71.5%) of ancylostomiasis was observed. Every patient received tetrachloroethylene, and no toxic effects from the drug were observed. The incidence of trachoma was 5.7%.

ITALY

Asian Influenza.—Many articles have appeared in the press blaming the authorities for not having provided a vaccine in time to prevent the current epidemic of Asian influenza, the first outbreak of which occurred among 150 children in August in a summer camp near Rome. The virus entered the country through the port of Naples. Almost all children in the camp were ill with influenza within a few days. A 10-year-old girl with rheumatic heart disease died from bronchopneumonia two days after the onset of influenza. Two days later a similar epidemic developed in a summer camp at Montelimeto. In less than two days all 71 campers, aged 11 to 17, who had arrived from Naples or its environs were ill. No deaths occurred in this group.

Naples was hit hardest with 14,226 reported cases in the period between Aug. 1 and Sept. 20. Because of the benign course of the disease, undoubtedly many cases were not reported. Consequently, the existence of at least twice as many patients with Asian influenza can be assumed. A more realistic account can be obtained from the Mutual Medical Assistance Service which reimburses its members for the cost of the medicines prescribed by their physicians. The amount paid for prescriptions billed in August was three times as much as was paid in August, 1956. Currently the epidemic has slowed down in Naples, but it is believed that at least 10% of the inhabitants of the city have had the disease.

Between Aug. 1 and Sept. 20 about 10,000 persons in Rome were reported to have contracted Asian influenza. This number should also be doubled. The mortality rate in Rome was higher than that in Naples. There was a mean case fatality rate of 0.25%, and death always occurred as a result of acute pulmonary complications. In Milan, a large industrial city in the North, Asian influenza is more feared than elsewhere because of the prevalence of smog. The vaccination program in Milan is more extensive and better planned than in other Italian cities. On the whole, in Italy Asian influenza has been moderate, but highly contagious.

INDIA

Plasma Sodium and Potassium.—Nath and Chakrabarti (*Indian J. M. Res.* 45:359 [July] 1957) stated that sodium and potassium play an important role in maintaining the reaction of tissue fluids, osmotic equilibrium, excitability of tissues, and physiological amounts of water in the different compartments. These normal functions are interfered with during operations. Many workers have reported potassium deficiency during the postoperative period, and, as potassium is essential for cellular metabolism, its administration during this period has been strongly recommended. As diet is restricted for a few days after operation, the authors studied the degree of sodium and potassium imbalance in surgical conditions when different types of fluid were given. Estimations of these electrolytes were made before, immediately after, and 24, 48, and 72 hours after operation. The plasma potassium level was reduced while the plasma sodium level showed a concomitant rise in patients who underwent surgical operations and received solutions of sodium chlo-

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The items in these letters are contributed by regular correspondents in the various foreign countries.

ride, glucose, or plasma substitutes. This change was only temporary, the values of both the electrolytes returning to normal after 48 hours without the administration of any potassium salt. No significant alteration in the plasma potassium and sodium levels was observed when blood transfusion was given. Thus, not enough hypopotassemia was observed after operations to justify giving potassium salts. Blood transfusion is necessary to prevent hypopotassemia when stress conditions tend to persist.

Vitamin B Complex and Estrogens in Oral Cancer.—V. R. Sathe and co-workers (*Indian J. M. Res.* 45:401 [July] 1957) reported that various etiological factors such as deficiency of the constituents of vitamin B complex, alteration in metabolism of sex hormones, tobacco chewing or smoking, dental sepsis, and syphilis have been associated with precancerous lesions in the mouth such as atrophy of papillae of the tongue, leukoplakia, glossitis, and angular stomatitis. Oral cancer accounts for nearly 20% of all malignant diseases in patients attending the Tata Memorial Hospital, Bombay. Other workers had observed that the excretion levels of nicotinic acid, thiamine, and riboflavin were low in patients with oral cancer and in persons with degenerative and chronic inflammatory lesions in the mouth without any histological evidence of cancer as compared to these values in healthy controls. The authors studied 16 men with oral cancer; 12 had cancer of base of tongue, 2 of the cheek, and 2 of the oropharynx. Diagnosis was established by punch biopsy. All were habitual smokers. Sixteen normal men served as controls. Both groups were hospitalized and kept on a normal hospital diet. Urine was collected for estimation of creatinine, thiamine, riboflavin, and estrogen levels. On the third and fourth day of admission, test doses of nicotinic acid, thiamine, and riboflavin were given orally and the urine examined for estrogen content. On the fifth and sixth days the urine was analyzed to determine the excretion levels of the vitamins and estrogens before the administration of estrogens. The first test dose was given on the seventh and the second was given on the eighth day. Thiamine and riboflavin levels were determined in the urine on the seventh and eighth days.

The excretion levels of thiamine and riboflavin were found to be lower than normal and that of estrogens higher than normal in the cancer patients. Administration of vitamins led to an increase in excretion of estrogens in the cancer patients but not in the controls. Administration of estrogens to the cancer patients decreased the excretion levels of thiamine and riboflavin, but in the controls the values were unaltered. The mean basal excretion level of thiamine in patients with oral cancer was significantly lower than that of the controls, indicating a gross deficiency of thiamine in the cancer patients. A low urinary output of riboflavin was also observed in these patients. The basal excretion level of estrogens in cancer patients was significantly higher than that in the controls. Loading the body with exogenous estrogens created a state of extraordinary deficiency of vitamins B_1 and B_2, which are involved in estrogen metabolism. Administration of the vitamins in the amounts used increased the excretion levels of estrogens, the increase being helpful in restoring the hormonal imbalance. Estrogen treatment appears to be harmful in men with oral cancer, as it induces a deficiency of thiamine and riboflavin.

Kwashiorkor.—V. T. Jayalakshmi and co-workers (*Indian J. M. Res.* 45:431 [July] 1957) determined the serum sodium, potassium, calcium, magnesium, blood urea, total plasma protein, and plasma albumin levels; prothrombin time; and degree of the eosinopenic response to epinephrine in two groups of patients with kwashiorkor, one given 60 and one 100 Gm. of protein daily. The serum sodium and calcium levels were subnormal at first but rose to normal when the high-protein diet was used. The serum potassium and magnesium levels were within normal limits. The prothrombin time was slightly elevated in these patients but returned to normal after treatment. The eosinopenic response to epinephrine, which was unsatisfactory on the admission of a number of these patients, improved after treatment with the high-protein diet. The patients who were given the high-protein diet showed no advantage with regard to either clinical improvement or regeneration of serum albumin. The blood urea concentration was low on the patients' admission but showed a significant increase after treatment.

Influenza in Children.—S. Merchant (*Indian J. Child Health* 6:7 [Aug.] 1957) reported 35 cases of influenza in children requiring hospitalization. The recent influenza epidemic in Bombay affected the children as well as adults, although the highest incidence in children was seen as the epidemic in general was on the decline. The diagnosis was based on a history of influenza in other members of the family and the presence of a markedly congested throat. Of these cases, 30 occurred in children between 6 months and 3 years of age. No infants below 6 months developed the disease. The course of the disease was milder in the 28 patients over 3 years of age. Seven of these patients showed encephalitic manifestations. The rest of the 28 patients in the older age group were grouped as nonencephalitic and had fever as the presenting symptom. Five of these had hyperpyrexia which was resistant to hydrotherapy and antipyretics. Three patients, including two with hyperpyrexia, had marked polyuria and polydipsia, and five had dyspnea. The congestion of the throat in some patients resembled that seen in measles. Only eight patients had scattered bronchitic signs, and none showed any signs of consolidation or myocarditis. Of these 28 patients 5, including the 3 with hyperpyrexia, died. Various antibiotics (alone or in combination), sulfonamides, and cortisone had little effect on patients with hyperpyrexia. The group with encephalitis had convulsions in addition to fever, four had hyperpyrexia, and six had severe restlessness which was not affected even by large doses of sedatives. Polyuria, loss of consciousness, and bulging fontanelle were present in some. Examination of the spinal fluid revealed no abnormality except increased tension. Four of these seven patients died. The author suggested that polyuria and hyperpyrexia are produced as a result of involvement of the hypothalamus.

Serum Glycoprotein and Sedimentation Rate in Pulmonary Tuberculosis Patients.—A. L. Bhatia and coworkers (*Indian J. M. Res.* 45:299 [July] 1957) stated that the content of glycoprotein fractions is abnormally high in the serum of patients with various pathological conditions. The authors studied the relationship between the hexose content derived from one of the serum glycoproteins, the sedimentation rate, and the activity of the disease in patients with pulmonary tuberculosis. Eighteen samples of blood were collected from normal persons, 6 from patients with arrested tuberculosis, and 71 from patients with active tuberculosis. A close relationship between the activity of the disease and the glycoprotein fraction was observed in patients with moderately advanced and far advanced disease, which group formed about 87% of the patients tested. In 48% of the patients both the sedimentation rate and the hexose content gave values increased in proportion to the activity of the disease, and in 39% only the hexose content was increased, but the sedimentation rate failed to indicate the extent of the disease. In patients with minimal activity of the disease, the values of the hexose content and the sedimentation rate were more in line with those of the normal and arrested cases. The hexose content was thus a dependable guide only in patients with moderately advanced and far advanced disease.

Serum Lipid Partition in Patients with Leprosy and Tuberculosis.—Gokhale and Godbole (*Indian J. M. Res.* 45:327 [July] 1957) stated that the lipolytic enzyme activity of the blood is affected in certain pathological conditions. This change is supposed to be due to an altered fat metabolism. The authors studied the lipolytic enzyme activity and its relation to lipid partition in the serum of 165 healthy subjects, 105 patients with leprosy, and 103 patients with tuberculosis. The serum constituents studied were phospholipids, total cholesterol, total fatty acids, total lipids, lipolytic esterase, and lipase with and without sodium tauroglycocholate activities. The average figures obtained in patients with leprosy and those with tuberculosis were compared with those obtained in normal subjects. In patients with leprosy or tuberculosis the serum lipid constituents were higher than in normal subjects, but the lipolytic enzyme activity gave lower figures than normal. This difference was greater in patients with leprosy than in those with tuberculosis. This increase in the serum constituents and the decrease in the serum lipolytic enzyme activity indicate a disturbance in the fat metabolism in these two diseases.

PERU

Tranquilizers.—A symposium on the use of tranquilizers in psychiatry was held at Lima in July.

Chlorpromazine.—Dr. M. Chicata gave chlorpromazine to 45 hospitalized schizophrenic and 9 manic-depressive patients. This drug was given in an average daily dose ranging from 75 to 500 mg., and in about 67% of the patients one or more of the conventional physical therapeutic procedures was also used. More than half of the whole group had previously received other treatments. Total remissions were observed in 80% and social remissions in 10% of the schizophrenic subjects ill for a year or less, whereas in those who had been ill more than a year these percentages were 37.7 and 33.3 respectively. In the manic-depressive group, all of the patients showed substantial improvement in the first three months of treatment. Most of the patients who were improved were discharged and advised to take a maintenance dose of 100 to 200 mg. daily. Because of the shortness of the follow-up, the author reached no conclusion regarding the long-term results of this treatment, but he believed this drug to be helpful in the symptomatic management of these psychoses. The combination of chlorpromazine and electroshock therapy proved to be most effective for the schizophrenic and manic patients and chlorpromazine with promethazine and drug-induced sleep for the depressive patients. The treatment of choice must depend on the form of the psychosis, the duration of the process, and the type of treatment previously used.

Dr. A. Cano treated a series of 106 patients with diverse forms of psychoneuroses with chlorpromazine. A small initial dose (50 to 75 mg. daily) of the drug was used and was gradually increased according to the clinical response. A therapeutic dosage of 100 to 150 mg. daily was reached in 62% of the patients, 200 to 400 mg. in 29%, and 600 to 1,200 mg. in 9%. But for the very agitated patients, the oral route was preferred. When necessary, barbiturates or stimulants were also given. In most patients with obsessive neurosis, anxiety neurosis, and hypochondria, psychotherapy was systematically applied. The best results were obtained in the patients with hysteria and paranoid states; all of the former and 80% of the latter were markedly improved. In patients with neurosis or hypochondria, the response to the treatment was less gratifying; only 30% of the former and 50% of the latter reached either social or complete remissions. The drug checked the psychoneurosis in 60% of the patients suffering from reactive syndromes. Extrapyramidal side-effects from chlorpromazine were noted only in patients receiving more than 800 mg. daily, and, when present, they were only moderate.

Dr. M. Almeyda spoke on the use of chlorpromazine in alcoholic patients. In 30 with acute alcoholism and in an agitated state, he obtained a prompt and marked relief of the symptoms with the parenteral administration of this drug, the psychomotor hyperexcitability and the vomiting being promptly stopped by it. Similar favorable symptomatic responses were observed in patients with acute postalcoholic states and in patients with alcoholic psychosis, but the drug failed to prevent delirium tremens in most cases. The speaker stressed the fact that chlorpromazine and other tranquilizers do not modify the psychopathological cause of the addiction to alcohol but give only symptomatic relief. Dr. Carrilo Broatch, however, cited the histories of three patients with delirium tremens who were greatly improved by chlorpromazine given parenterally.

Reserpine.—A therapeutic trial with reserpine in 159 ambulatory and hospitalized psychotic patients was reported on by Dr. R. Jerí. A small proportion of these patients had been treated previously with physical and/or surgical procedures. The initial daily dose was usually 10 to 20 mg. and the maintenance dose 1 to 8 mg. After follow-up periods of four months to three years, the results were good in 16 patients, fair in 32, slight in 41, and poor in 70. Since relapses following the discontinuance of the therapy were common, a daily maintenance dose was given to every improved patient. Demelioration, however, frequently occurred even in spite of the continued treatment and the author was compelled to resort to physical therapy. The author concluded that (1) reserpine is of limited value in the management of psychotic patients, but it is worth a trial in acute cases where it should be given in appropriate doses for four to six weeks and in chronic, rebellious cases just before drastic surgical procedures are attempted; (2) the chief action of the drug is temporary modification of the anxiety states; (3) it has no significant effect on the basic psychopathological disturbances; (4) the longer the duration of the disease the poorer the response to reserpine; (5) no significant relationship was noted between the daily dose given and the therapeutic results; (6) whenever shock therapy is indicated because of a failure with reserpine, a minimum of eight days should elapse between the withdrawal of the drug and the application of shock; (7) dangerous undesirable side-effects rarely occur in reserpine-treated patients; (8) patients with the catatonic and paranoid forms of schizophrenia get the best results from reserpine; and (9), in general, the drug seems to be inferior to chlorpromazine in the management of psychoses.

Dr. C. Saavedra S. reported a series of 15 patients (9 women and 6 men), suffering from schizophrenia of six or more years' duration, who received reserpine only after having failed to respond to several therapeutic procedures. Reserpine was given parenterally at first in a daily dose of 2.5 mg. After one week the drug was given by mouth and the dosage slowly increased until an average daily maintenance dose of 6.8 mg. in the women and 10 mg. in the men was reached. The men showed no improvement in spite of several months of treatment; two women had a social remission, six were improved, and one was not benefited.

Side-effects.—A distinct and paradoxical psychomotor hyperactivity in patients taking chlorpromazine or reserpine was described by Drs. G. Mori and M. Chicata. This undesirable side-effect has been reported by numerous psychiatrists, but attention has been directed chiefly to elucidating its physiopathology rather than its clinical manifestations. The authors observed the syndrome in 10 of 65 psychiatric patients who received chlorpromazine, reserpine, or both. They noted that it is characterized by (1) a compulsion to move so that the patients are unable to remain in one position, the words used by them to describe their feelings being strikingly similar, (2) a subjective restlessness (the patients say they feel this restlessness throughout their bodies), (3) an increased awareness of their surroundings which renders them hypersensitive to any external stimulus, and (4) insomnia. Because these patients have no hallucinations or other perceptual disturbances, this syndrome is not to be regarded as a symptomatic psychosis.

Drs. Chicata and Beteta pointed out that chlorpromazine and/or reserpine give rise frequently to untoward neurological side-effects. In a series of 45 psychotic patients receiving these drugs, bradykinesia was noted in 38; Parkinson-like trembling in 24; muscular hypertonia and amimia each in 22; postural hyperreflexia in 18; neurovegetative disturbances in 17; speech disorders in 14; inhibition of automatic motion in 9; akathisia in 7; Aran-Duchenne-like atrophy in 3; micrography, anisocoria, and pyramidalism each in 22; and changes of the deep sensibility, nystagmus, and severe oculogyric crisis each in one. In most patients the neurological complications were transient, and rarely were they serious enough to warrant discontinuation of the treatment. A definite relationship between the dose and time of administration of the drug and the occurrence of the neurological side-effect was noted. The same doctors reported on three patients suffering from progressive dementia paralytica who responded dramatically to treatment with penicillin and chlorpromazine. The latter proved particularly helpful in controlling the productive symptoms of the psychosis but failed to improve the neurological and serologic signs of the disease. A maintenance dosage was necessary.

Azacyclonol.—Dr. A. Saavedra V. treated nine patients who had symptomatic psychoses with azacyclonol. In one the psychosis was caused by infection, in two by toxic conditions, in five by cerebral arteriosclerosis, and in one schizophrenia was complicated by an infection-induced psychosis. Azacyclonol was given orally in doses of 100 to 400 mg. daily, except for the last-mentioned patient who received 600 mg. In most patients this drug was given only after such other tranquilizers as chlorpromazine, reserpine, or meprobamate had been tried. The exogenous symptoms subsided shortly after the treatment was started, and a total remission was attained within the first 10 days of therapy in eight patients; in the schizophrenic patient only the agitation syndrome due to the infection yielded to the treatment. The author stated that, in general, clinical response appears to occur more rapidly with azacyclonol therapy than with other forms of treatment. This rapid response indicates that azacyclonol may be used as a diagnostic aid. If a patient believed to have symptomatic psychosis is given this drug, clinical improvement should occur within three to eight days, otherwise an endogenous psychosis is to be suspected and physical therapeutic procedures resorted to.

Dr. G. Sánchez warned against the indiscriminate and arbitrary use of the tranquilizing drugs because of the wide range of side-effects frequently observed. Addiction and even death may result from their continued use.

Drug Therapy in Infant Psychiatry.—At the same meeting, Dr. Emilio Majluf said that diphenhydramine hydrochloride syrup was given, in daily doses ranging from 10 to 90 mg., to 75 infants with various conditions. This proved helpful in controlling restlessness and sleep disorders, but its general usefulness diminished as the age increased. There were no undesirable side-effects except slight somnolence. Chlorpromazine was used in 150 patients affected with psychosis, mental deficiency, primary or secondary behavior disorders, epilepsy, stammering, and cerebral palsy. Children showing restlessness, negativism, agitation, or aggressive or destructive tendencies were specially selected to be given this therapy, and in many of them a favorable response was observed, but the symptoms tended to return after the chlorpromazine was withdrawn. In some patients, notwithstanding the administration of relatively large doses, there was no improvement. These failures were observed mainly in children with mental retardation. The best results were elicited in children with behavior disturbances and the so-called organic brain syndrome who showed a marked diminution of the aggressiveness and agitation especially when use of promethazine hydrochloride was added to the treatment. At the start of the treatment, chlorpromazine was given in daily doses of 12.5 to 37.5 mg. The dosage was progressively increased until a daily dose of 100 or 150 mg. in children over 2 years of age was reached. The complications most frequently noticed were somnolence and skin discoloration. The liver function tests in some patients receiving large doses were found to be abnormal, but concomitant clinical manifestations were lacking. In epileptic children the chlorpromazine proved to be helpful by reducing the frequency of the attacks and minimizing the behavior disorders known to occur in these patients. In those with status epilepticus, the drug given intravenously succeeded in some cases in arresting the seizures.

About 100 of the children who showed agitation, aggressiveness, destructive tendencies, or psychosis were given reserpine. The clinical response, although generally encouraging, was inferior to that obtained with chlorpromazine, but those children with nervous tics responded better to reserpine. This drug was given in daily doses of 0.1 to 10 mg., depending on the severity of the spasms. Nasal stuffiness and, less frequently, gastrointestinal disturbances were the complications most frequently observed in children receiving reserpine. No Parkinson-like syndromes were observed in children taking either drug. Mephenesin gave some benefit in certain patients with cerebral palsy, but it failed to bring relief to psychotic children. On the other hand, it deserves trial in stammerers. Meprobamate was useful in treating behavior and sleep disorders. This drug was given to 34 children, 22 of whom showed behavior disorders and 7 of whom were mentally retarded. This drug is the medicament of choice in infant psychiatry, because it is well tolerated and relatively nontoxic. The therapeutic dose is 200 mg. three times daily. In some patients, however, this dosage was progressively increased without causing major side-effects.

Glutamic acid was given to 79 patients in an average daily dose of 12 Gm. Mongolism, present in 19 of them, was the condition most benefited by this drug, especially when it was given early in the course of the disease. Glutethimide was given to a few patients, and it was found to be a fairly good hypnotic and sedative. Promazine (Liranol) was not tolerated by the one patient to whom it was given. All of the drugs tested gave some symptomatic relief to patients with one syndrome or another, but none had a specific action on the cause. Chlorpromazine was the most promising and had the broadest field of action in infant psychiatry. Despite their lack of specificity, the tranquilizing drugs have a favorable effect on the integrative functions of the ego.

MISCELLANY

THE DEPENDENTS' MEDICAL CARE PROGRAM (PUBLIC LAW 569—84TH CONGRESS)

AN INTERIM PROGRESS REPORT TO CONGRESS FROM THE DEPARTMENT OF DEFENSE

1. *Purpose and Scope.*—This report is rendered on the verbal request of the Armed Services Committee, House of Representatives, U. S. Congress. The report is also furnished to the Armed Services Committee, U. S. Senate. Its purpose is to inform the Committee of the progress of the Dependents' Medical Care Program which was brought into being by Public Law 569, 84th Congress. This report primarily covers Title II of the Law. This Law had an effective date six months after approval (7 December 1956). Except for those data herein which are stated to have been derived from sample studies, the operational data cover the period from the beginning of the Program to 1 July 1957 (slightly more than six months). Data herein are derived from reports, claims, correspondence and other information which have reached the Office for Dependents' Medical Care. No recommendations for changes in the Law regarding the concept or scope of the Program are contained in this report. More experience is considered necessary before the need for such changes can be determined.

2. *Method of Operation of Program.*—Public Law 569 delegated the operation of the Program to the Secretary of Defense and provided for consultation with the Secretary of Health, Education and Welfare in preparation of plans and regulations. The Secretary of the Army was designated the Executive Agent for the civilian part of the Program in the United States, Alaska, Hawaii and Puerto Rico. Its operation was further delegated, through appropriate Staff agencies, to The Surgeon General of the Army. The latter, because of the nature of the Program and because it encompassed medical care for dependents of members of the Navy, Marine Corps, Air Force, Coast Guard, and the commissioned members of the Public Health Service and the Coast and Geodetic Survey as well as the Army, set up a separate office for the administration of the Program. The Office is known as the Office for Dependents' Medical Care and its head has been designated Executive Director for the Program. The Office for Dependents' Medical Care has consummated contracts with Blue Cross and Mutual Benefit Health and Accident Association of Omaha, Nebraska, to act as Fiscal Administrators for the payment of hospital and nurses' claims in designated states and other areas. Contracts have been consummated with State Medical Societies, Blue Shield Plans, and Commercial Insurance Companies to act as Fiscal Administrators for payment of claims of civilian physicians. Questions, differences, and disputes concerning operation of the Program which cannot be resolved locally are sent to the Office for Dependents' Medical Care. The Executive Director utilizes three (3) Advisory Committees. A Medical Service Advisory Committee consisting of representatives of the Army, Navy, Air Force, and Public Health Service meets formally each month and its members serve as daily contacts, when necessary, to resolve "Medicare" problems involving personnel of the respective services. The American Medical Association maintains a "Medicare" Committee which meets periodically to discuss matters which affect the physicians of the nation and has designated a physician in its Washington Office as a day by day contact. The American Hospital Association maintains a similar committee which also meets with the Executive Director to discuss problems affecting hospitals and has named an executive in its Washington Office as a contact. The Secretary of Defense also has an Advisory Committee for Dependents' Medical Care which has had two meetings (8 September 1956 and 17 May 1957) to consider problems and watch progress of the Program. The operation of the Program is depicted diagrammatically in Chart 1.

3. *Historical Brief*

a. Development Period (7 June 1956 to 18 October 1956): A Task Group consisting of representatives of the Army, Navy, Air Force and Public Health Service was organized by the Secretary of Defense. Throughout the deliberations of the Task Group (later known as the Interservice Committee) representatives of the Health Insurance Industry, the Blue Cross Commission, the Blue Shield Commission, the American Medical Association, and the American Hospital Association were frequently consulted. This Group formulated the Joint Directive, the Joint Regulations, the format of the Schedule of Physicians Allowances and the claim form for operation of the Program. This Group also did much work in preparing the medical profession for the Program by presentations at meetings. The Joint Directive, which was signed by the Secretary of Defense and the Secretary of Health, Education and Welfare on 18 October 1956, was the basis for all necessary regulations, contracts, claim forms, and informational material upon which the operation of the Program was later based. Some of the principles promulgated by the Joint Directive, which are basic to the Program, are considered worthy of special mention:

(1) Standards of Medical Care per se were not delineated; however, definitions of physician, hospital and certain hospital accommodations do, in effect, set standards.

(2) Maximum Fee for Physicians' Services would be negotiated on the basis of a Schedule of Allowances, format for which was circulated to all State and area Medical Societies. The latter were requested to insert fees which would represent the maximum amount physicians could charge for each procedure performed under the Program. The fees were to be based on a Physician's normal charges to a private patient having an income of approximately $4,500.

(3) Provision for Additional Fees to Physicians performing unusually difficult procedures or encountering unusual complications upon their submission of a Special Report.

(4) Full Payment for Authorized Service Rendered in approved civilian sources by physicians, nurses and hospitals was established by enumerating specifically the charges patients had to pay. (This principle has come under much discussion in medical groups and has been responsible for two State Medical Associations to decline participation in the Program.)

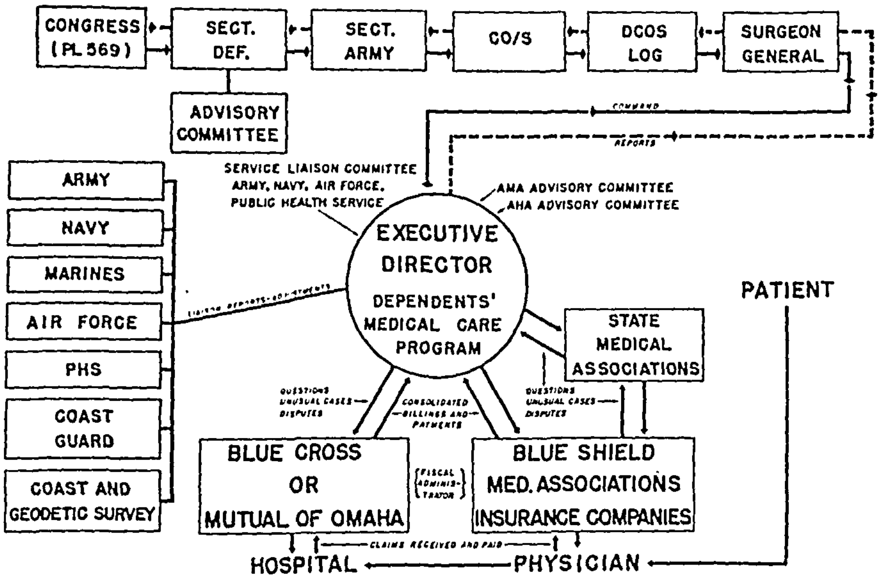
CONGRESS (PL 569)
SECT. DEF.
SECT. ARMY
CO/S
DCOS LOG
SURGEON GENERAL
ADVISORY COMMITTEE
COMMAND
REPORTS
ARMY
NAVY
MARINES
AIR FORCE
PHS
COAST GUARD
COAST AND GEODETIC SURVEY
SERVICE LIAISON COMMITTEE ARMY, NAVY, AIR FORCE, PUBLIC HEALTH SERVICE
AMA ADVISORY COMMITTEE
AHA ADVISORY COMMITTEE
LIAISON REPORTS-ADJUSTMENTS
EXECUTIVE DIRECTOR
DEPENDENTS' MEDICAL CARE PROGRAM
PATIENT
STATE MEDICAL ASSOCIATIONS
QUESTIONS UNUSUAL CASES DISPUTES
CONSOLIDATED BILLINGS AND PAYMENTS
QUESTIONS UNUSUAL CASES DISPUTES
BLUE CROSS OR MUTUAL OF OMAHA
FISCAL ADMINISTRATOR
BLUE SHIELD MED. ASSOCIATIONS INSURANCE COMPANIES
CLAIMS RECEIVED AND PAID
HOSPITAL
PHYSICIAN

Chart 1.—Schematic representation of the operation of the Dependents' Medical Care Program.

(5) Free Choice between Uniformed Services and civilian medical facilities, as contemplated by the Law, except where restrictions are made by the Secretary of the Service concerned with the approval of the Secretary of Defense, was specifically stated. This has been a great factor in the acceptance of the Program by the civilian medical profession. (No area has been declared restricted at this writing and no requests for restriction have been brought to the attention of the Office for Dependents' Medical Care.)

(6) Prompt Payment by delegation of the paying function by contract to Medical Associations, or local insurance companies or health plans normally in the business of paying hospital and physician claims.

(7) Local Adjudication by providing for local Medical Societies to make recommendations on questions of medical practice or charges.

b. Implementation Period (3 September 1956 to 7 December 1956)

(1) The Office for Dependents' Medical Care was organized with the idea of integrating the many heterogenous activities pertinent to the operation of of the Program into compact units to effect efficient and effective administration with a minimum of personnel and attendant costs. Two major units were established, one to conduct the "business" functions (e. g., contracting, budgeting, accounting and auditing), the other to maintain liaison and rapport with the seven uniformed services, and medical and allied professions, hospital organizations, and the dependents themselves. Both units are designed to detect weaknesses and faults and design corrective measures. The office was established in the Office of The Surgeon General, U. S. Army, and commenced operations on 3 September 1956. Key civilian personnel have not all been obtained even at this writing.

(2) Development of Contracts was accomplished in accordance with Directives issued by the Secretary of Defense which contained stipulations that all aspects of the contract procedure would be carried out in accordance with the Armed Services Procurement Regulations. Within the scope of these Directives, two basic types of cost-type (nonprofit) contracts were developed—one for the payment of physicians and the other for the payment of hospitals and private duty nurses. In developing these contracts, at times it was necessary to request deviations from the Armed Services Procurement Regulations when provisions pertinent to supply and construction contracts were not deemed applicable or appropriate to the "Medicare" Program. (For example, in one instance request was made to permit the allowance of negotiating costs, since under a nonprofit contract the contractor would have no other basis for recovery of those expenses.) As deviations became necessary, they were approved upon request and justification. Close coordination was maintained with representatives of the American Medical Association and the Blue Shield during the development of the physician contract and with representatives of the Blue Cross and the Insurance Industry during the development of the hospital contract. Representatives of each of these organizations took an active role in the development phase of the Program and submitted many constructive comments. Repre-

sentatives of the Army Audit Agency and the General Accounting Office also participated actively throughout the development of the contracts.

(3) Negotiation and Consummation of Contracts was effectively accomplished with all parties concerned. It was necessary to obtain approximately 40 officers and civilian employees on a temporary basis. These personnel returned to their respective assignments as their duties were completed. The Surgeon General, The Judge Advocate General, other Technical Services of the Army, the Army Audit Agency and the other Uniformed Services were all extremely cooperative in providing their assistance.

(a) Physicians Contracts were primarily directed toward the establishment of maximum physicians fees. The Inter-Service Committee, in August 1956, contacted each Medical Association asking them to determine a fee structure to be used as a basis for negotiation and to name an agency which it desired to act as its Fiscal Agent. As nominations for Fiscal Agents were received, the Army Audit Agency conducted pre-award surveys to determine performance potential. In late September 1956, a copy of the proposed contract was sent to each medical society with the request that, on a designated date, its representatives and those of its Fiscal Agent come to Washington, D. C., to negotiate. Six states were scheduled for negotiation every 48 hours, commencing 24 October 1956. To meet this schedule, six negotiating teams and one master contract team were constituted within the Office for Dependents' Medical Care. Each team consisted of a procurement officer, a physician, a lawyer, and an auditor. Fiscal Agents designated by medical societies varied considerably. Some societies designated themselves; others appointed a local Blue Shield; two societies selected Blue Shield to take over medical society functions; and Alaska selected Washington State Blue Cross. During negotiations, representatives of the American Medical Association were provided office space in the Office of The Surgeon General to assist negotiators. Negotiations were successful, and on 7 December 1956 contracts were in effect in all but the following states:

Maine	Local Blue Shield required legislature charter amendment to contract under "Medicare" Program and was taking necessary action.
Rhode Island	Medical Society's proposed fee schedule was not acceptable to the Government.
Ohio	State Medical Society declined to contract for a full service coverage medical program.
Alabama	State Medical Society hesitant to contract for a full service coverage medical program and was unable to obtain a Fiscal Agent acceptable to the Government.
Texas	Medical Society proposed fee schedule was not acceptable to the Government.
Florida	Contract was consummated on 10 December 1956.

Subsequently, all of the states entered into complete contractual arrangements except Maine, Ohio and Rhode Island. The Maine legislature has amended the Charter of the Blue Shield in that State effective 28 September 1957, at which time it is expected contractual arrangements will be consummated. Mutual of Omaha has accepted a contract to pay physicians in Ohio and Rhode Island, the former on the basis of a Schedule of Allowances mutually agreeable to the Ohio Medical Association and the Government, the latter on a Schedule promulgated by the Government. The present situation with regard to the contractual arrangements is shown on Chart 2.

(b) Hospital Contracts involved only two contractors. The Secretary of Defense directed that contracts for the payment of hospitals be negotiated with Blue Cross and the Commercial Insurance Industry. He also suggested the states to be serviced by each. The allocation of Alaska, Hawaii and Puerto Rico to Blue Cross was made by the Executive Director. In an effort to identify potential contractors in the insurance industry, approximately 850 individual companies writing health and accident insurance were solicited via three insurance trade associations and the Small Business Administration. A synopsis of proposed procurement was published by the Department of Commerce. Approximately 48 insurance companies indicated an interest in the Program. Upon further correspondence, only the Continental Life Insurance Company and the Mutual Benefit Health and Accident Insurance Ass

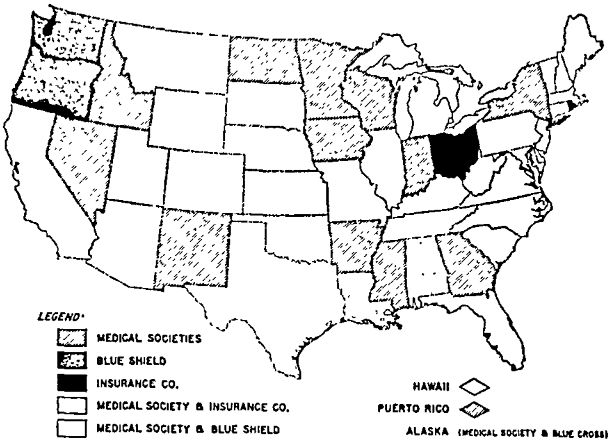
LEGEND:
▨ MEDICAL SOCIETIES
▩ BLUE SHIELD
■ INSURANCE CO.
☐ MEDICAL SOCIETY & INSURANCE CO.
☐ MEDICAL SOCIETY & BLUE SHIELD
HAWAII ◇
PUERTO RICO ◇
ALASKA (MEDICAL SOCIETY & BLUE CROSS)

Chart 2.—Fiscal administrators for payment of physicians' claims.

tion of Omaha, Nebraska, evidenced that they were desirous of handling the entire area allocated to the insurance industry. For reasons of economy and ease of administration, the capability of servicing the entire area was a prime factor in selection. Both of these companies were requested to come to Washington, D. C., for negotiations. Prior to negotiations, the Continental Life Insurance Company withdrew its interest and negotiations were held with Mutual of Omaha which was found to be a qualified contractor. In compliance with its contract, Mutual of Omaha entered into three subcontracts with individual companies to service Kansas, Louisiana, and North Dakota. Two of these subcontractors are in the small business category. (NOTE: In carrying out its role as contractor, Blue Cross subsequently entered into subcontracts with 55 local Blue Cross plans throughout its designated areas.) Both hospital contracts were in effect on 7 December 1956. The distribution of States and Territories between Blue Cross and Mutual Benefit Health and Accident Insurance Association is depicted on Chart 3.

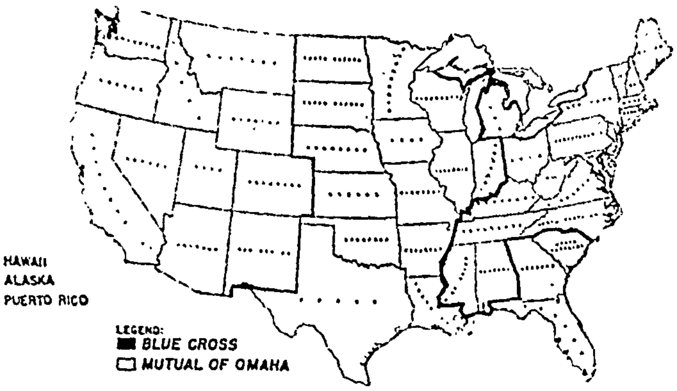

Chart 3.—Fiscal administrators for payment of hospital claims.

(c) Payments by Army Commanders were anticipated in that certain contracts might not be consummated by 7 December 1956 and procedures were formulated whereby Army Commanders would take over the role of contractors and make payments to physicians or hospitals in the areas concerned. This prior planning proved fruitful, for on 7 December 1956 it was necessary for Army Commanders to function in the role of physician contractors in the following areas:

First Army Commander	Maine and Rhode Island
Second Army Commander	Ohio
Third Army Commander	Alabama
Fourth Army Commander	Texas

Subsequent to 7 December 1956, contracts were consummated for all states except Maine, as indicated:

With State Medical Society and designated Fiscal Agent:

Texas	7 January 1957
Alabama	21 February 1957

With an Insurance Company as Fiscal Agent; Medical Society not a party to the contract:

Ohio	14 January 1957
Rhode Island	1 April 1957

4. *Operational Experience from 7 December 1956 to 1 July 1957*

a. Claims and Costs: As of 1 July 1957, a total of 103,595 hospital claims totaling $10,732,272.81 had been received in the Office for Dependents' Medical Care. As of the same date 127,902 physicians claims had been received totaling $8,805,128.28. The average cost of the hospital claims was $103.60; that of the physicians claims, $68.84. Administrative costs for the hospital claims had been $259,803.98; for physicians claims $416,532.93. (NOTE: These costs have not been audited, the contracts providing for audit after 1 July 1957. It should be pointed out also that the Claims and Costs do not represent all authorized service rendered during this period because claims are still being received for services performed during the early months of operation of the Program.) Tables 1 and 2 show the distribution of the above Claims and Costs between the four services responsible for the fiscal accounting for the medical care of dependents of all seven Uniformed Services.

In addition to claims recorded in Table 2, Army Commanders have reported paying 2,016 physicians' claims with a cost of $145,320.20. Overseas commands have reported 89 approved medical care claims in the amount of $7,335.94. Overseas Commanders are authorized to make arrangements for civilian medical care when indicated. The number of claims and costs, by overseas area, are shown in Table 3.

TABLE 1.—*Hospital Claims Received in Office for Dependents' Medical Care (7 December 1956 to 1 July 1957)**

Per Cent	Claims	Service	Cost	Per Cent
27.1	28,056	Army	$ 2,893,078.34	27.0
40.0	41,500	Air Force	4,238,516.14	39.4
30.6	31,704	Navy	3,346,763.75	31.2
2.3	2,335	Public Health Service	253,914.58	2.4
100.0	103,595	Total	$10,732,272.81	100.0
Average Cost per Claim				$103.60

	Hospital Care Cost	Administrative Cost	Total Cost
Army	$ 2,893,078.34	$ 69,874.69	$ 2,962,953.03
Air Force	4,238,516.14	99,154.81	4,337,670.95
Navy	3,346,763.75	84,393.00	3,431,156.75
PHS	253,914.58	6,381.48	260,296.06
Total	$10,732,272.81	$259,803.98	$10,992,076.79
Number of Contractors Billing			2
Total Billings Received			20

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* Source: Office for Dependents' Medical Care, 1 July 1957.

b. Distribution Between Services: Chart 4 indicates the distribution of the hospital plus physician costs between the Army, Navy, Air Force, and Public Health Service on the basis of Vouchers received in the Office for Dependents' Medical Care for the months of January thru June. The trend has been approximately in the same proportion throughout the period and would indicate that Air Force dependents account for approximately 40% of the Program, Navy—32%, Army—26%, and Public Health Service 2%.

TABLE 2.—*Physicians' Claims Received in Office for Dependents' Medical Care (7 December 1956 to 1 July 1957)**

Per Cent	Claims	Service	Cost	Per Cent
24.7	31,472	Army	$2,244,485.64	25.5
41.2	52,746	Air Force	3,570,551.54	40.5
31.9	40,890	Navy	2,796,624.17	31.8
2.2	2,794	Public Health Service	193,466.93	2.2
100.0	127,902	Total	$8,805,128.28	100.0

Average Cost per Claim $68.84

	Physicians Cost	Administrative Cost	Total Cost
Army	$2,244,485.64	$101,516.25	$2,346,001.89
Air Force	3,570,551.54	165,155.20	3,735,706.74
Navy	2,796,624.17	140,503.07	2,937,127.24
PHS	193,466.93	9,258.41	202,725.34
Total	$8,805,128.28	$416,423.93	$9,221,561.21

Number of Contractors Billing 52
Total Billings Received 323

* Source: Office for Dependents' Medical Care, 1 July 1957.

c. Cost by Diagnosis and by Patient Day: Early in July 1957, a special cost study was made on the basis of the claims received from eight states (California, Colorado, Florida, Kentucky, Texas, New York, Washington, and Wisconsin) during the period 7 December 1956 to 1 June 1957. In order to make the study as accurate as possible, only those cases were included for whom at least one claim from an attending physician *and* one claim from a hospital had been received. There is no assurance that all claims of anesthesiologists, pathologists, consultants, private duty nurses, and others who may have rendered compensable care to these patients are included. Occasional claims for service rendered even in December are still being received in the Office for Dependents' Medical Care. The over-all information from this report is shown in Table 4.

TABLE 3.—*Medical Care Claims from Overseas Areas Received by Office for Dependents' Medical Care (7 December 1956 to 1 July 1957)**

Vienna, Austria	7	$ 732.50
British Honduras	2	164.50
Ottawa, Canada	6	345.29
USARCARIB, Canal Zone	14	1,015.68
Costa Rica	1	81.74
Copenhagen, Denmark	1	88.60
San Salvador, El Salvador	?	81.26
Heidelberg, Germany	41	2,339.90
New Delhi, India	2	115.24
Italy	8	1,584.30
Singapore, Malaya	3	90.89
Mexico City, Mexico	1	172.43
Union of South Africa	2	480.61
Cambodia	1	43.00
Total	89	$7,335.94

* Source: Office for Dependents' Medical Care, 1 July 1957.

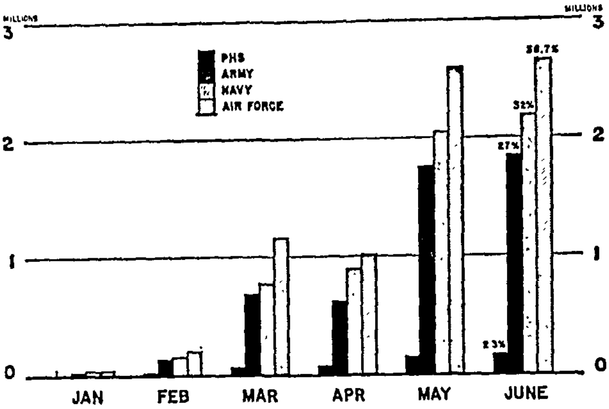

Chart 4.—Distribution of costs (physicians and hospital) by service as indicated by claims received by month.

All diagnoses appearing more than 45 times in the study were segregated and costed. As might be expected, maternity cases head the list and tonsillectomies are second. The diagnoses, total cost of physician and hospital, average cost per case and average days in the hospital are shown in Table 5.

d. Hospital Contractors Performance: In May 1957, a study was made of the hospital claims then on hand to determine costs to the Government in the areas serviced by Blue Cross and those serviced by Mutual of Omaha. Excluding the amounts paid by the patients, this study, comprising 17,255 Blue Cross claims and 19,667 claims from Mutual of Omaha, indicated the average cost in the Blue Cross area was $20.86 per patient day and that for the Mutual of Omaha area was $18.78. Administrative

TABLE 4.—*Costs per Case and Patient Day (Special Study—Eight States)**

	Totals	Averages
Claims	19,878	
Claims per Case		2.4
Patients (Cases)	8,326	
Hospital Days	35,155	
Hospital Days per Case		4.2
Cost	$1,743,349.26	$209.39 per Case
Hospital	851,486.81	102.27 per Case
Physician†	891,862.45	107.12 per Case
Per Hospital Day per Patient		49.59
Hospital		24.22
Physician†		25.37

* Source: Office for Dependents' Medical Care, July 1957.
† Physicians costs include care furnished before and after hospitalization (e. g. pre and post-natal care).

costs have not yet been audited and are, therefore, subject to change in accordance with the provisions of the contracts, but these costs, at the time of the study, were $4.48 a claim for Blue Cross and $2.22 for Mutual. This information is depicted on Chart 5. No positive conclusions can be made at this time concerning the final costs to the Government in these two areas. A comparison was made of costs in California and Tennessee (Blue Cross area) with Hospital Guide—1956 data[*]; also, in the Mutual of Omaha area using Texas and Indiana. In this comparison, the payments made by patients, approximating $5.00 per day, was added to Government costs in order that the figures would be more comparable. While it is evident that patient income, as reported in Hospital Guide, includes a much larger variety of patients and a greater range of hospital accommodations than is included in the Dependents' Medical Care Program, it would appear that the cost for dependents hospitalization under the Program is in line with normal patient income. In California, hospital costs per Dependent Medical Care patient per day were $30.65, whereas the average patient income per patient day of hospitals in California was $32.20. In Tennessee, respective figures were $22.15 and $21.05; in Texas, $26.68 and $24.84; and in Indiana $22.83 and $22.56 (Chart 6).

TABLE 5.—*Costs per Diagnosis and Hospital Days (Special Study—Eight States)*[*]

	Patients (Cases)	Total Cost (Physician & Hospital)	Average Cost† per Case	Average Days in Hospital
Maternity Delivery (Uncomplicated)	2,866	$ 640,966.25	$224	4.5
Miscarriages and Abortions	345	53,512.51	155	2.5
Complications of Pregnancy	75	12,758.74	171	4.5
Tonsillitis	1,863	210,357.27	113	1.4
Respiratory Infections	378	61,833.51	164	5.9
Uterovaginal Prolapse	56	28,455.03	508	8.3
Other Gynecological Conditions ..	359	80,061.23	223	5.7
Appendicitis	125	41,824.91	335	4.4
Hernia	120	35,427.53	295	4.3
Hemorrhoids	53	15,365.03	290	6.0
Gastroenteritis	101	13,380.95	132	5.3
All Others‡	1,990	543,292.45	273	
Total	8,333	$1,743,349.28	$209	4.2

[*] Source: Office for Dependents' Medical Care, July 1957.

† Rounded off to even dollar for easier comparison.

‡ Includes 353 separate diagnoses, none appearing more than 45 times.

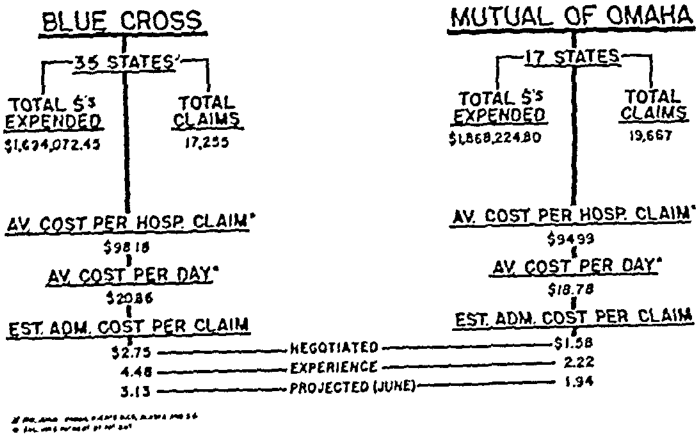

Chart 5.—Comparison of hospital costs in areas covered by Blue Cross and Mutual of Omaha. (Represents actual cost to the government.)

e. *Age and Sex of Patients:* A study of some 20,000 physicians' claims in April 1957 indicated the age and sex distribution of patients. As would be expected, 80% were female and 20% male, the latter being principally children under 14 (Chart 7).

f. *Patients Residing Away from Sponsor:* Approximately 42% of a sample of 1,000 hospital claims indicate that sponsor of patient is overseas, on a ship, attending a school, or otherwise is living apart from his family (Chart 8).

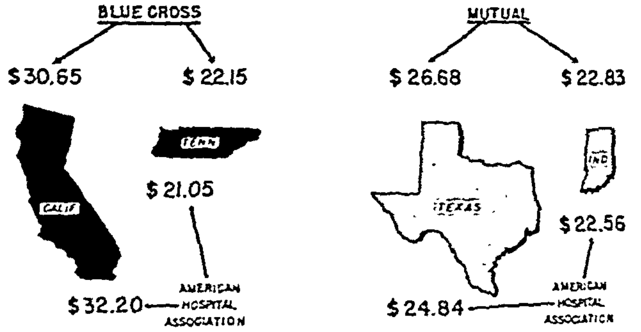

Chart 6.—Average per diem cost for hospitalization in four states (two in Blue Cross area, two in Mutual of Omaha area) as compared with Hospital Guide figures in 1956 publication. Amount patient paid has been added for comparison purposes.

g. *Diagnosis of Patients:* A sample study of 5,000 physicians' claims by diagnosis has been made and tabulated in Chart 9. 28.8% were normal deliveries, 17.4% were tonsillectomies, 8% surgery on female genital system. Medical and pediatric care is largely listed in hospital visits and accounts for 18.1% of the cases.

5. *Acceptance of the Program*

a. *By Physicians:* The physicians of the United States, Alaska, Hawaii, and Puerto Rico have, in general, accepted the Dependents' Medical Care Program. Some physicians believe that the Program represents a form of socialized medicine and have brought this impression to the forefront in our negotiations and in certain articles which have been written and published. Many of the physicians dislike Government intervention of any kind. They consider this Program as Governmental intervention in the practice of medicine, but even these physicians realize that the reasons given for the institution of the Dependents' Medical Care Program are valid and that certainly something should be done for the service men and their families. In several states, physicians have never been confronted with a service program as distinguished from an indemnity program on a scale as large as the Dependents' Medical Care Program. These physicians, in particular, voice their dissatisfaction on being told what their maximum fees should be in any given instance. They consider it one of the rights inherent in the private practice of medicine to determine what a patient should pay for a certain amount of care. Physicians traditionally object to "paper work," and our Fiscal Administrators receive many complaints about having to fill out the forms and have them accurate. Physicians, as a whole, do not like to turn to a manual to determine how much care can be rendered at Government expense for an acute emotional disorder or whether a scar can be taken from a woman's forehead if she applies to him for that attention under the Program. The Dependents' Medical Care Program has certain limitations on the care of nervous and mental diseases, elective surgery conditions, and chronic conditions and diseases. Some claims for service rendered have had to be denied because of the limitations of the Program and these denials sometimes invoke caustic comments from the physicians concerned. Physicians as a whole, however, are participating admirably in rendering care to eligible dependents of the Uniformed Services. This is indicated by the fact that 127,902 claims were received from physicians during the period of this report (Table 2). No complaint has been received from any dependent that a civilian physician refused to furnish care authorized by the Dependents' Medical Care Act.

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[*] Hospitals, Journal of the American Hospital Association, 1 Aug. 1956, Table 13, Column 14 (Patient Income per patient day).

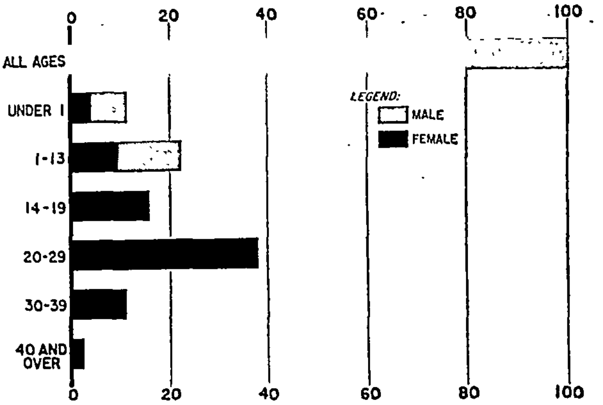

Chart 7.—Age and sex distribution of dependent patients. (Study on basis of 1,000 cases.)

b. By Hospitals: It can be stated that the Program has been universally accepted and somewhat widely acclaimed by civilian hospitals. It has been learned through many contacts, both personal and through the medium of correspondence, that many hospital officials are highly pleased with the Program and the manner in which it is being administered. Some have made representations for lowering of the requirements for participation, as outlined in the Joint Directive under the definition of hospital, but it is both interesting and gratifying to know that a number of hospitals have taken necessary action to permit their participation in the Program.

c. By the Dependent: In an effort to learn of the reactions of dependents to the Program, approximately 75 questionnaires are being sent out each month to dependents representing the seven Services in widely distributed geographical areas who, since the Program became effective, have availed themselves of civilian care. Approximately 75% of all questionnaires have been returned and, without exception, all have indicated that they were gener

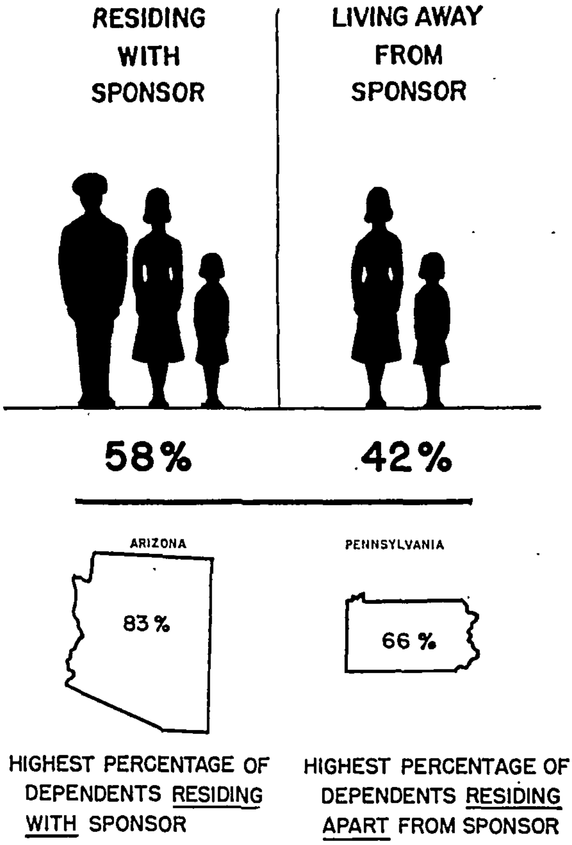

Chart 8.—Percentage of patients residing with and not residing with sponsors. (Study on basis of 5,000 cases.)

ly satisfied with the care received. Many were highly laudatory in their comments, making such statements as: "I have no complaints whatsoever to make. The doctors, hospitals, and nurses were wonderful. All I have is praise." "Service was good in all respects. I was very pleased and think the Medicare Program is one of the nicest things the Service has done to help dependents." The only criticisms received relate to the scope of the care provided. Lack of dental care and outpatient care are most prominently mentioned.

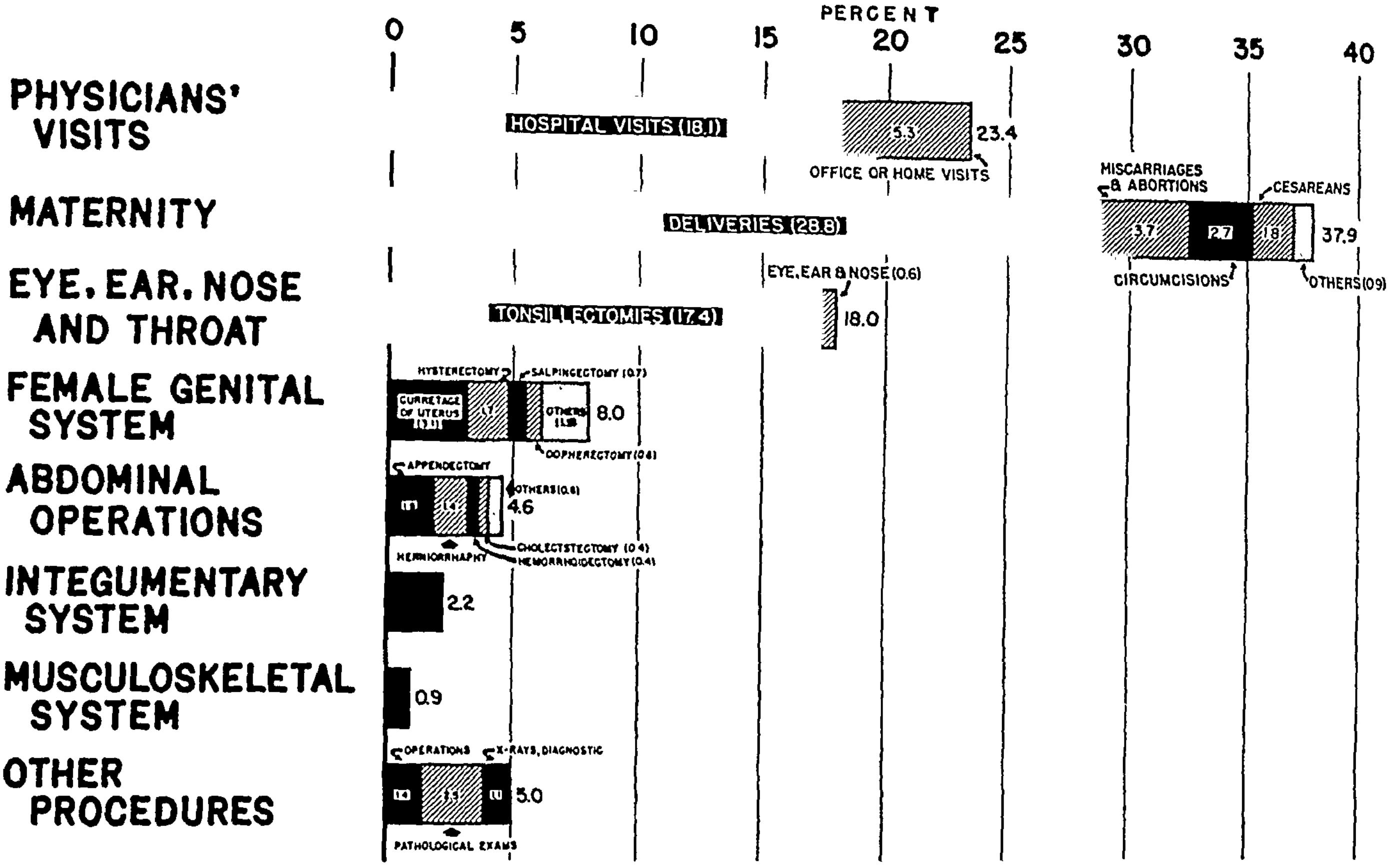

Chart 9.—Distribution of cases by diagnosis. (Based on study of 5,000 cases.)

6. *Noticeable Effects on Uniformed Services*

a. Impact on Medical Services: The Medical Services of the Armed Forces have reported a drop in admission of dependents to Services' hospitals ranging from 6 to 12% with a particular drop in maternity deliveries of 15 to 21%. Public Health Service reports slight increase of dependents in its hospitals because of authorization in law for Armed Forces dependents to be admitted. This Service also has had a drop in its Obstetric Services. Army, Air Force and Public Health Service all report the elimination of Dental Care for dependents by the Law is creating dissatisfaction.

b. Morale Influence: All services indicate this factor is difficult to determine but the Air Force and Public Health Service both indicate that the Program has been well received and accepted by their personnel.

7. *Prospects for the Future*

a. Contract Extensions and Future Negotiations: All of the contracts for both hospitals and physicians payments which were described in paragraph 3, above, were originally negotiated to end 30 June 1957. These contracts have all been renewed with only a few minor changes. Five of the renewed contracts will terminate each month, beginning in January 1958, at which time it is expected that each contract will again be negotiated. This staggering of negotiations (five a month, January through November 1958) will enable negotiations with all contractors to be accomplished by the same Government contract team and thereby minimize variations and inconsistencies between contracts.

b. Fee Schedule Revision: Experience has shown that a number of revisions are needed in the Schedule of Allowances for payment of physicians' fees. In many instances the diagnostic nomenclature is not clear to all physicians. The amount of pre and post-operative care which is considered normal in some areas is not normal in other areas. There is need for special explanations and delineations of these and other items in the Schedule and this will be done as rapidly as experience brings these matters to the forefront. At the present time, the Office for Dependents' Medical Care is working with certain of the specialty groups in the medical profession in an effort to correct discrepancies.

c. Claim Form Revision: Efforts are being made to simplify and improve the claim form. All contractors have been asked to submit any suggestions they may have.

d. Dental Coverage: The Secretary of Defense has authorized the Executive Director, Office for Dependents' Medical Care Program to make a detailed study of the entire dental coverage problem for Service dependents. A committee consisting of representatives of all of the Services plus insurance and American Dental Association representatives has been appointed and is currently actively studying this matter. From this committee's report, it is hoped that substantial decisions as to future course can be derived.

e. Indemnity Coverage: At its annual meeting in New York City on 3-7 June 1957, the House of Delegates of the American Medical Association passed a resolution urging the Board of Trustees of the American Medical Association to request the Secretary of Defense "to modify the Medicare Program, regulations, and Directives so that the Program could be operated as an indemnity type Program where desired by individual states." The Program to date has been operated on a full service concept as prescribed in the Joint Directive and mentioned in paragraph 3, above. Studies will have to be conducted to evaluate the two types of coverage for decision at an appropriate time.

f. Fraud: To date there have been only three cases of possible fraud reported to the Office for Dependents' Medical Care. These cases are all being investigated by proper Government agencies. Many of the contractors have fraud detection means in force in their normal business. These methods are being utilized in their operation of the Dependents' Medical Care Program. As the Program progresses, however, it is possible that fraud attempts may increase and all concerned with the administration of the Dependents' Medical Care Program are being urged to be alert continuously to the possibilities of fraud and to present them for proper investigation and adjudication whenever they arise.

g. Group Pressures: The Office for Dependents' Medical Care has been contacted by several groups desiring to be included as eligible for payments under the Departments' Medical Care Program. Notable, are the chiropodists who feel that they should be eligible to practice their specialty in their own right under the Dependents' Medical Care Program and be eligible to receive direct payments. There are many doctors of osteopathy in the nation who have limited licenses to practice one specialty, principally obstetrics. This group has indicated that it should be included as eligible to receive payments under the Program. The pharmaceutical societies have made representation of their desire to have the Program include a method for paying pharmacists directly when physicians prescribe drugs for full maternity care. It is possible that these groups and others may make strong representation to the Defense Department and to the Congress for their inclusion in the Program.

h. Extensions of Program: It is known that one bill at least has been introduced into the Congress to provide for extension of the Dependents' Medical Care Program to include certain retired members of the uniformed services. Other extensions of the Program have been suggested, one being that it should include parents and parents-in-law of members of the uniformed services for care in civilian facilities. Provisions for greater dental care coverage in civilian facilities is often mentioned. Many feel also that more extensive outpatient care for dependents should be authorized in civilian facilities. They point out that if this were available some procedures now requiring hospitalization might be performed on an outpatient basis, thus saving the Government money. These items are merely mentioned as suggestions which have been received in the Office for Dependents' Medical Care.

8. *Conclusions*

a. That the Dependents' Medical Care Program has been generally well accepted by civilian physicians and civilian hospitals as well as the dependents of the uniformed services.

b. That the Program is reaching many dependents who would otherwise have been unable to receive medical care in uniformed service facilities.

c. That the Program is widespread and has reached many physicians and hospitals in its first 7 months.

d. That considerable study is required before many of the administrative problems being encountered can be resolved and before recommendations are made concerning extensions of the Program.

9. *Recommendations*

That the Dependents' Medical Care Program be continued as at present until studies and experience indicate that modifications are timely and appropriate.

CORRESPONDENCE

MEDICAL CARE PROGRAM, U. M. W. A. WELFARE AND RETIREMENT FUND

To the Editor:—I believe it would be of genuine interest to many members of the American Medical Association to read the statement which I presented to the Reference Committee on Miscellaneous Business on June 5, 1957, at the time it was considering the "Suggested Guides." This statement, which will make my position honestly known to everyone, is as follows:

In consideration of the numerous references to the medical care program of the U. M. W. A. Welfare and Retirement Fund which have appeared in medical journals, the public press and elsewhere, the following information is presented:

The task of providing medical care for the miners and their families was assumed by the Fund in 1948 because the unnecessary suffering, disability and preventable deaths due to inadequate medical care, or none at all, were shocking to all who knew the facts. The report of a Medical Survey of the Bituminous Coal Industry, conducted under Government auspices in 1946, contains the statement that in some of the mining communities provisions for health are "so poor that their tolerance is a disgrace to a nation to which the world looks for pattern and guidance."

It was sought from the beginning to enlist the understanding and cooperation of organized medicine at the national, state and local levels. All that we asked, or have ever asked, is that a good quality of medical care be provided for a potential of approximately a million beneficiaries at a cost that is reasonable and just as determined by the medical profession itself. It is generally agreed that the Fund has the right to expect good medical care for its beneficiaries at reasonable cost, and that organized medicine has an obligation to help in bringing this about.

The Medical Service of the Fund assured the profession of its concurrence in the principle of free-choice-of-physician and payment on a fee-for-service basis. Neither the physicians who were to render the service, nor the Fund which was to pay them, could foresee all of the problems that would arise nor the adjustments that might be necessary in providing solutions. It was the fervent hope, however, that organized medicine and the Medical Service of the Fund, working together in a united effort, could iron out whatever difficulties might be encountered and develop a pattern of medical care that would insure far better results than could be obtained by any other means, and serve as a model that others might follow.

While the majority of the 6,800 physicians who are receiving upward of $17,000,000 a year in payment by the Fund have rendered high grade, conscientious service under conditions of mutual confidence and satisfaction, there are those who, for lack of qualification for the work they have undertaken, or for other reasons, have not. In consequence, both the beneficiaries and the finances of the Fund have suffered greatly from unnecessary surgery, unnecessary hospital admissions, excessive length of stay of hospitalized patients, and services of inferior quality often resulting in duplication of treatment and costs at a later date.

The presentation of these facts to state and county medical societies, hospital staffs and individual physicians has, with few exceptions, resulted in little, if any, improvement. In our experience county medical societies and hospital staffs are too often reluctant to supervise their colleagues and effect the drastic changes in local practices and patterns of care that should be made. It is furthermore impracticable for representatives of the Fund to take specific action against physicians suspected of being responsible for such abuses unless they are so flagrant as to be readily apparent from statistical evidence that can be adduced.

As a means of lessening these difficulties the Fund adopted a provision that, as far as practicable, and except in emergency cases, all beneficiary patients would be seen in consultation with an appropriate specialist to decide upon the necessity of hospitalization before they could be admitted and treated at Fund expense. The resulting reductions in the rate of surgical operations and hospital admissions were in some instances from 30 to 50 per cent, and the advantages to the patient of specialist consultation were found to be considerable.

This requirement, however, was bitterly opposed by the medical societies in several states and was largely discontinued in the face of disapproval by resolution of the House of Delegates of the American Medical Association at its meeting in June, 1955.

Immediately following this action the Committee on Medical Economics of the Medical Society of the State of Pennsylvania and representatives of the Medical Service of the Fund engaged in a series of friendly and constructive conferences designed to establish better working relationships between physicians in the coal mine areas and the medical program of the Fund. After much concentrated effort an agreement on working principles was finally reached and signed by the Board of Trustees of the Medical Society of the State of Pennsylvania and the Medical Service of the Fund. It became effective Jan. 1, 1956, and was published in full in The Journal of the American Medical Association, issue of May 12, 1956, with a commendatory editorial from which the following paragraph is quoted:

> It is the culmination of months of consultation and conference, and the efforts of the medical society and the results of these efforts can be commended to the attention and study of all who wish to improve relations between medicine and employer or employee groups.

On Oct. 23, 1956, the agreement was declared "null and void, terminated and ended" by action of the House of Delegates of the Medical Society of the State of Pennsylvania. No arguments were presented and no reasons were stated.

The foregoing efforts to attain its sole objective of providing good medical care for its beneficiaries, at fair and reasonable cost, having come to naught, the Medical Service of the Fund adopted other means for achieving, in part at least, its purpose. In surgical cases, for example, it has proven in the interest of the beneficiaries to have the surgery performed by broadly competent and responsible surgeons according to criteria established by the American Board of Surgery, the American College of Surgeons, or other agency similarly qualified to pass judgment on the education and training of broadly competent and responsible surgeons. This is an indication that their technical ability is above the average and that their surgical judgment, which some consider more important, is keen and sound. It is the purpose of the Fund, therefore, to utilize as far as practicable the services of surgeons whose qualifications are thus established, in preference to the services of physicians whose qualifications for surgery the Fund is not in position to judge.

This further effort to insure a high quality of medical care for its beneficiaries and reduce the cost of unnecessary hospitalization and surgery is again encountering the violent opposition of certain segments of organized medicine, with the assertion that the Fund is thereby lowering the quality of medical care to the patient, is discriminating unfairly and interfering with the free choice of physician.

With the overthrow of the agreement worked out with the Committee on Medical Eeconomics and approved by the Board of Trustees of the Medical Society of the State of Pennsylvania, there followed a rash of vituperative, unsubstantiated and misleading statements and articles in the publications of certain medical organizations, in the public press and elsewhere, together with resolutions and actions by certain county medical societies which are questionable as to their ethics and legality; also circular letters to local medical society members urging them to break their good relations with the Fund, and threats of local medical society discipline of any who do not. The hackneyed charge of "socialized medicine," and the absurdity of the statement that the Medical Service of the Fund is conniving to get control of the hospitals of this country by infiltrating highly qualified physicians, whom the miners like, are examples of the tactics being used.

Were it possible to insure a thorough, carefully planned and impartial investigation of the factors underlying these and other destructive actions and make the findings known to every member of the medical profession and the public at large, it is our firm conviction that most of the difficulties in providing good medical care for our people would cease to exist. The Medical Service of the Fund would cooperate most heartily in such an undertaking, which would doubtless prove of inestimable value to others concerned with problems of similar nature.

Any thoughtful person in full possession of the facts would know that with the investment the Fund has made in medical care for its beneficiaries the program cannot stop; it must go on. Petty persecutions, such as those by certain county medical societies which endeavor to prevent the Fund from providing medical care for its beneficiaries by denying membership in the county medical society to physicians who do so, will be settled by legal means if other measures fail. Other petty forms of persecution have already failed.

The program is now in its ninth year of operation. Most of the physicians who have served the Fund desire to continue to do so, free from intimidation by others who, through lack of understanding or for selfish reasons, are constantly pressing for destructive measures while carefully avoiding a searching inquiry which would reveal the facts *in toto.*

It is the steadfast desire of the Medical Service of the Fund to maintain the friendly understanding and cooperative relationships which have always existed with the fairminded members of the medical profession who have understood the spirit and intent with which the program has been conceived and carried out. They do not deny that it is the right of the Fund, as it is the right of others, to determine the services for which it will pay, and the physicians who will render them. They realize also that it is the obligation of the Trust Fund to control and administer its own program with the greatest efficiency and economy possible. While exercising this right and fulfilling this obligation, we shall continue our endeavor to work in harmony and cooperation with the medical profession to serve the best interests of the patient, which is the primary purpose to which we all are dedicated.

Warren F. Draper
Executive Medical Officer
Welfare and Retirement Fund
United Mine Workers of America
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MEDICAL LIFE IN TAIWAN

To the Editor:—Having just read the article, "American Medicine Abroad—Hong Kong," by Lou Hazam, in the Aug. 24 issue of The Journal, page 1968, I am prompted to write. Because the itinerary of the "March of Medicine" production team, sponsored by Smith, Kline & French Laboratories, is so near to Taiwan (Free China), we wish you could even now include this field of medical work in that story. The 35-bed hospital here, located very near the ocean, with a backdrop of "straight-up" mountains, is unique in that it is the only one serving the 150,000 mountain people, the aborigines of the island. Many walk days to get help, patients are often brought long distances on the backs of relatives—it is a daily picture. They are the most needy, living still very close to their original ways, colorful and interesting, having given up headhunting and tattooing of the face only recently.

1. Mountain people, Taiyal Tribe—Hualien, Taiwan.

We have been here now one and a half years but find the work continuously challenging. We enjoyed the story of the Isle of Happy Healing very much and intend to visit there soon—missed it our last time in Hong Kong because of bad weather. We hope you can include this (our) area on your informative production, not for a minute because of our connection but because it is about as fascinating as one can imagine. Our best wishes in your project of "telling" what is being done; we constantly feel that "we cannot do enough!" We wish we could help to initiate a pure food and drug act here!

2. Mountain people of Amis Tribe—Hualien.

We are most fortunate in having Marcy Ditmanson, M.D. (University of Minnesota, 1951), to help with the usual and the unusual. He is planning to set up another hospital hopefully for the mountain people, if possible.

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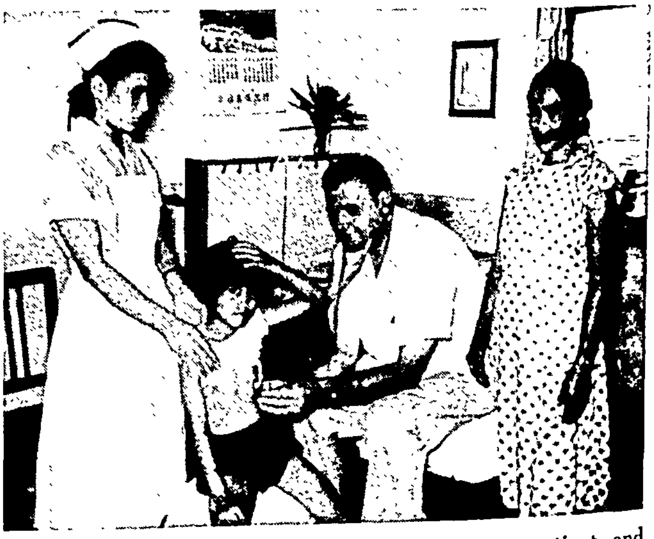

3. Mountain people of Taiyal Tribe: nurse, patient, and mother with tattoo on face.

AIR TRAVEL

To the Editor:—In The Journal of Sept. 21, 1957, the first article "The Physician's Role in Air Travel" by Dr. F. S. Spiegel, page 205, warrants comment. In general, the article is very well written, and very timely for physician advice to patients traveling by commercial airlines. However, several statements in the body of the article are at variance with the experience of medical men connected with commercial air travel.

The statement is made that infants under 6 weeks of age are usually not transported by commercial carriers unless there are very extenuating circumstances. This has never been so within commercial airlines in the United States. While it is true that, in the early days of air travel, we restricted infants below 14 days of age from traveling in nonpressurized aircraft, we have gradually lowered this requirement so that medical directors of most of the certificated commercial airlines have issued directives that infants above 7 days of age may travel without any restrictions. We are still of the opinion that infants below 7 days of age may not have a definite, set respiratory pattern and may get into difficulty while breathing air slightly above the earth's surface, such as is found even in pressurized cabins, which are pressurized to approximately 8,000 ft. of altitude.

We are also not in agreement with the statement that children are only "fair" air travelers, as stated in this article, and that the incidence of airsickness and ear trouble is greatest in those under 5 years of age, 5 to 10 times more frequent than in adults. In fact, the figures we have obtained on air travel in the general population are to the effect that children are usually better travelers than adults. They have less ear difficulty because the eustachian tube is larger and not as tortuous and a good lusty cry or yell will usually serve to aerate the ears, whereas in adults there may be more difficulty.

The statement is also made that the female is more prone to develop motion sickness in air travel, at a rate five times the rate encountered in males. While it is true that the adult female is more susceptible, our figures show that she is approximately three times as susceptible as the male. We are also not in agreement with the statement that this is in all probability due to anxiety and apprehension, but, rather, we feel that the lack of exposure to motion in general is what accounts for the high rate of motion sickness in adult females.

With respect to passengers recovering from recent coronary thrombotic episodes, it is a standing rule within airline medical departments that coronary patients may travel approximately six weeks from the time of incurrence of an average infarct. In fact, our criterion is that, if the patient is able to climb one flight of steps unassisted and is not in any degree of failure, he is an excellent air passenger. The statement made on page 207 in this article, "It is not unusual for a commercial airliner to make an emergency stop at an en route airport to place a passenger in the care of a physician" should read "It is unusual. . . ."

The medical criteria for air passengers in general have been enumerated in an article published in *Current Therapy* in 1951, which was a symposium by the various airline medical directors in collaboration. In general, Spiegel's article is very excellently written and should be timely information to the general practitioner in giving good, sane advice to his patients as passengers.

Ludwig G. Lederer, M.D., Ph.D.
Medical Director, Capital Airlines, Inc.
Chairman, Medical Committee,
Air Transport Association
Washington National Airport
Washington 1, D. C.

MEDICAL HISTORY

To the Editor:—The International College of Surgeons has established at its headquarters in Chicago a Hall of Fame in which the history of medicine in various parts of the world is revealed. Various rooms are dedicated to the portraying of surgical and medical history, each room being supported by the government or physicians in a country. In the museum and its Hall of Fame are objects depicting many aspects of world medical history. Thus one can see a crude but operable x-ray device nearly half a century old, the original model of the Carrel-Lindbergh artificial heart, trephined skulls from Peru more than 3,000 years old, Florence Nightingale's nurse cap and 75 of her letters, surgical instruments of all eras, and actual penned reports of Freud, Pasteur, Curie, and other medical greats. Then there is a Hall of Murals portraying successive achievements of the healing arts from antiquity to the modern age, and in the Hall of Immortals are life-sized sculptures of such forerunners of modern surgical science as Imhotep, Hippocrates, Galen, Ambroise Paré, Vesalius, William Harvey, Morgagni, Louis Pasteur, Semmelweis, Lister, Röntgen, and Marie Curie. Thirty nations have rooms they have furnished with exhibits highlighting their own contributions to medicine, and others are investigating what they can contribute. There are, however, many items that members of the medical profession have in their own possession but would like to have assembled in a medical museum. To these an invitation is extended to send such memorabilia to the International College of Surgeons, 1516 Lake Shore Drive, Chicago 10. The donors of articles will be acknowledged by appropriate labels on the articles presented.

Max Thorek, M.D.
International Secretary General
International College of Surge
Chicago 10.

RETIREMENT

To the Editor:—I read with interest the recent article appearing in The Journal, July 27, 1957, page 1477, entitled "Medicine's Biggest Battle: Taming Time." Much of what was written was to the point and pertinent. I have some questions about the discussion following the section entitled What About Retirement. The aim is in the correct direction, but the target, I feel, is not the right one. Let me make my point by using the partial sentence: ". . . how essential it is for elderly patients to retain the status and worth-whileness which comes with regular employment."

Is retirement the real problem? Does the adding of life to years depend upon remaining in the business world? I think not.

Today we face the problems produced by the later years, life after the age of 65. It is wrong to consider this phase as part of adulthood. Much of what was done in the earlier years was in preparation for adulthood. We shortchange ourselves when we equate "status and worth-whileness" in the later years with regular employment. The later years can be a period of "growth, motivation, and fulfillment." We err when we inflate the importance of retirement and the necessity of continued work. Rather, those over 65 years of age should be prepared at this point for a life with other goals, other values, other meanings, other enjoyments, other satisfactions. All of these are the result of having lived this long with adequate preparation to meet this phase of life. It is now when one can begin to answer the basic question: What is life? What does life mean to me? Too much effort is made to impress upon the later years the values of the earlier years. The retailoring of adulthood to fit the later years only results in a misfit. The later years allow for living through inner stimulation and the latter only develops with adequate preparation.

It is rare to find the adult preparing for the later years. This is why retirement after 65 is so horrifying.

Life after 65 can have greater depth than the satisfaction derived from a 40-hour a week job. There is the possibility of further growth, many useful roles, and a greater sense of life-fulfillment than the stretching of the mundane values of adulthood. I will agree that, if the only satisfaction a capable man can receive in life is the continuance of his employment, he should continue this. But we in medicine must continue "to help bring growth, motivation, and fulfillment to a larger majority of the population" by helping them to recognize a full life; ". . . we must begin to see the aging of the population as an achievement which has created an opportunity to be grasped, rather than as a set of problems to be solved along humdrum lines" (Aging in the Modern World, Ann Arbor, Mich., University of Michigan Press).

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LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Privileged Communications: Right of Opposing Counsel to Comment to Jury Concerning Exercise of Privilege.—This was an action for damages for injuries alleged to have been caused by an automobile accident. From a judgment in favor of the defendant, the plaintiff appealed to the Supreme Court of Minnesota.

After the accident occurred, the plaintiff did not think she was injured and drove on home with her husband. The following day she felt stiff and sore and had headaches and pain in the lower part of her back. She was 42 years of age, weighed 163 lb., and was 5 ft. 2 in. tall. She had been pregnant seven times, three of which pregnancies resulted in miscarriages. One miscarriage occurred shortly after the collision, but it is conceded that the collision had no connection therewith. Prior to the accident, the plaintiff had received treatment for various things at the Mankato Clinic and sometime after the collision she saw the clinic doctor who had been her family physician for a number of years and told him that she was having backaches and that she had been in an automobile collision. On the first day of the trial, which was about two and one-half years after the accident, the plaintiff was examined by a specialist in surgery from Minneapolis; who subsequently testified that she had suffered a prolapsed intervertebral disk as a result of the collision. This specialist was the only medical witness who testified on the plaintiff's behalf. She did not call any of the attending physicians or the doctors who had treated her prior to the accident and subsequent thereto. In fact, she exercised her statutory privilege in connection with such physicians so that the defendant was unable to call them either.

During his argument to the jury, the attorney for the plaintiff attempted to leave the impression with the jury that the failure to call the attending physician and to procure the records of the Mankato Clinic was attributable to the defendant's counsel. Therefore the defendant's counsel, in his argument, referred on several occasions to his inability to produce the doctors who had attended the plaintiff prior to the collision and emphasized that such failure was due solely to the fact that the plaintiff had exercised her statutory privilege. On appeal, the plaintiff contended that it was prejudicial error to permit the defendant's counsel to refer to the plaintiff's assertion of the privilege in his argument to the jury.

The Minnesota statutes provide "A licensed physician or surgeon shall not, without the consent of his patient, be allowed to disclose any information or any opinion based thereon which he acquired in attending the patient in a professional capacity, and which was necessary to enable him to act in that capacity . . ."

The Supreme Court said that there probably is no privilege in the field of evidence so abused as the physician-patient privilege. The purpose of the statute was to encourage full disclosure by a patient to his physician by prohibiting the physician from disclosing the information of a confidential nature which he obtained. The basis of the privilege was the confidential nature of the communication. Instead of accomplishing the purpose for which it was originally intended, said the court, the privilege has been so far corrupted today that it is used, at least in personal injury cases, for the most part for the suppression of the truth. In his treatise on evidence, McCormick says: ". . . More than a century of experience with the statutes [dealing with physician-patient privilege] has demonstrated that the privilege in the main operates not as the shield of privacy but as the protector of fraud." We intend to cast no reflection on use of the privilege in this case by the counsel for the plaintiff, said the Supreme Court. Throughout the years the privilege has been converted into a strategic device for the exclusion of evidence apt to be harmful to the case of the party having control of the evidence. As long as such use is approved, tacitly or directly, by the courts, it can easily be understood that the counsel for a party litigant will avail himself of the right to use it to the best advantage for his client. He can hardly be criticized for so doing.

As far as the statute goes, continued the court, it creates a right with which the courts cannot interfere. This case poses the question: How far shall the courts go in protecting an unfair advantage procured by one party to a lawsuit against his adversary by virtue of the privilege where plaintiff sues to recover for personal injuries and at the same time asserts the privilege which, theoretically at least, will keep secret the very injuries for which he seeks to recover damages? Under these circumstances, shall the court permit the jury to infer, if it chooses to do so, that his adversary was responsible for not producing the attending physician, or is it more in line with the administration of justice to put the blame where it belongs—on the party asserting the privilege?

The court then discussed some of its prior decisions in connection with the husband-wife privilege and stated that, in a civil case, if one of the parties insists upon his privilege to exclude testimony that would throw light upon the merits of the case and the truth of his testimony, we are of the opinion that it is a proper subject for comment to the jury.

Of course, said the court, the above is true where the privilege is asserted for the purpose of keeping secret the information acquired by the doctor in examining or treating the patient, but can the facts learned by the doctor be kept secret when plaintiff sues to recover for the very injuries he claims a right to keep secret? It is then incumbent upon the plaintiff to prove the nature and extent of his injuries. In doing so, he cannot at the same time keep secret the nature and extent thereof. As far as the statute gives him a right to close the mouth of the doctor we cannot interfere. And as long as the privilege is asserted for the purpose for which it was created, it should be given full respect. But when it is asserted for the sole purpose of gaining a strategic advantage over an opponent and accomplishes nothing pertinent to the purpose for which it was created, it should not be further extended by judicial decision. If it is so used, it is only fair that the jury be permitted to know who was responsible for keeping out the evidence most likely to establish the truth. The blame, in that case, should be put where it belongs, not left so that the jury can, perchance, accuse the wrong party of failing to call the doctor. We therefore now hold, concluded the Supreme Court, that, when a physician-patient privilege is asserted by a party to an action seeking recovery for personal injuries and the nature and extent of the injuries are involved, it is not error to permit fair comment to the jury by the adverse party on his inability to examine such attending physician concerning his examination and treatment of the patient.

The plaintiff's other contentions were also overruled and the judgment in favor of the defendant was affirmed. *Nelson v. Ackermann, 83 N.W. (2) 500 (Minnesota, 1957).*

Revocation of License for Associating in the Practice of Medicine with an Unlicensed Person.—This was a proceeding to review an order revoking the license of the petitioner. The trial court affirmed the order of the State Board of Medical Examiners, so the petitioner appealed to the court of civil appeals of Texas.

The evidence showed that the Hoxey Cancer Clinic was owned by Harry M. Hoxey and his wife, neither of whom are licensed to practice medicine. No medical doctor owned any interest in the clinic. For a period of time in 1955 the petitioner was em-

Mr. Finley's Feelings: 16 mm., color, sound, showing time 10 minutes. Produced in 1957 by and procurable on loan from Metropolitan Life Insurance Company, 1 Madison Ave., New York 10.

This animated film is designed to encourage discussion, to stimulate questions and comments, and to provoke an exchange of ideas about ways of meeting stress situations and handling day-to-day relationships with people. The principal character is Tom Finley, and although the viewers never see him, they become fairly well acquainted with him. Tom's emotional tensions get him and his associates into a variety of difficulties. The film prescribes no set rules for emotional health, but by the end of the film Tom has gained insight into his situation and has begun to see things more realistically. As stated by the producers, this film should be used only with a qualified discussion leader and should be previewed in advance to enable the discussion leader to become familiar with the content and to anticipate questions. Under these conditions, it can be recommended for showing to college and adult lay groups.

Complete Vaginal Repair: A Simplified Approach: 16 mm., color, sound, showing time 19 minutes. Prepared by Stanley F. Rogers, M.D., Jack Moore, M.D., and Warren Jacobs, M.D., Houston, Texas. Procurable on loan or purchase ($125) from Eaton Laboratories, Medical Film Division, Norwich, N. Y.

This film illustrates the surgical correction of cystourethrocele and rectocele accompanied by vaginal hysterectomy. The technique used is designed to simplify the procedure as much as possible. Emphasized also is repair of cystourethroceles and rectoceles. The accompanying vaginal hysterectomy is shown to be an incidental but very necessary part of the procedure if the best results are to be obtained. Included are colored drawings which help to show the points of anatomy and technique. The narration describes the purpose and technique of each step of the operation as it is performed. This is an excellent teaching film for the already accepted standard vaginal hysterectomy and repair procedure as outlined by Drs. Heany and Allen. The drawings are excellent, and the film as a whole is well produced. It can be recommended highly for showing to gynecologists, residents, and medical students.

Esophageal Atresia with Tracheo Esophageal Fistula: 16 mm., color, sound, showing time 14 minutes. Prepared in 1956 by and procurable on loan from Philip Thorek, M.D., 25 E. Washington St., Chicago 2.

By means of drawings and preoperative and postoperative roentgenograms, a very brief resume of the incidence, anatomy, and pathology of tracheoesophageal fistula and esophageal atresia is presented. The operative procedure is shown using the right posterolateral approach on 2-year-old infant. The procedure for an end-to-end anastomosis as well as an anastomosis over a T tube are presented in detail. Postoperative roentgenograms and pictures of the patient are presented. The surgical technique is excellent, and the film is very well organized. At the end of the picture the author states, "Our present thinking is that the T tube method is the method of choice in esophageal atresias and tracheoesophageal fistulas." This picture is recommended for surgeons who are interested in this surgical procedure. It will also be of value to pediatricians, house officers, and medical students.

NEW FILMS ADDED TO A. M. A. MOTION PICTURE LIBRARY

Dermatologic Office Procedures for the General Practitioner: 16 mm., color, sound, showing time 30 minutes. Prepared in 1956 by Gerald M. Frumess, M.D., Egbert I. Henschel, M.D., Henry M. Lewis, M.D., Denver. Procurable on loan (service charge $3) from Motion Picture Library, American Medical Association, 535 N. Dearborn St., Chicago 10.

The dermatological procedures that the physician may safely use in his office practice are shown objectively. These include electrosurgical and surgical removal of benign skin tumors, methods of biopsy, the use of solid carbon dioxide, patch testing, application of Unna's paste boot, and similar procedures. The photography and color are excellent. Although the sound track is not of the best quality, this film is very instructive and contains no repetition. It can be recommended for general practitioners, especially those in outlying districts, and for senior medical students.

The Motion Picture in Medical Education: 16 mm., color, sound, showing time 30 minutes. Produced in 1956 by the American Medical Association. Procurable on loan ($2) from Motion Picture Library, American Medical Association, 535 N. Dearborn St., Chicago 10.

Excerpts selected from many of the outstanding medical teaching films are included in this presentation to demonstrate the special qualities of the motion picture which make it a unique medium for teaching. This film shows the scope and flexibility of the motion picture as a means of presenting information and skills for learning purposes. The 25 sequences that were selected from existing films show a wide variety of filming techniques which make possible the reproduction of phenomena that are difficult, expensive, or dangerous to reproduce in other ways—such as the action of the mitral valve in situ. Good examples are also shown of experiences which are impossible to provide without the motion picture, i. e., normal circulation in the omentum of the rhesus monkey and ovulation in the rat, because only the time-lapse camera can speed up continuous motion to a point where such motion is discernible to the human eye. This film should be of great interest to medical educators. It is recommended for staff conferences, seminars, or institutes on teaching methods, not only to show the broad range of medical teaching films but also to stimulate greater use of the many excellent films now available.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Mavero-hepatic Icterus (Black Liver Jaundice). W. T. Bynum. Gastroenterology 33:97-103 (July) 1957 [Baltimore].

Nonhemolytic, nonobstructive jaundice has generally been identified as Gilbert's disease. There is much confusion in the literature with regard to nonobstructive, nonhemolytic jaundice. The author attempts to delineate Gilbert's disease and a new distinct clinical entity, as illustrated by a case history. This condition was first described by Mallory in 1943, and subsequently additional cases were observed by other investigators. The typical aspects were presented in a monograph by Dubin and Johnson in 1954. The 30-year-old man whose history is presented had all the characteristics presented by Dubin and Johnson but in addition had melanuria, which had not been reported before.

The author stresses the following as the salient features: (1) nonfunctioning gallbladder and normal extrahepatic biliary ducts; (2) vacillating serum bilirubin level with variations in the reacting fractions (this is an exception to the dogma that a vacillating bilirubin level is pathognomonic of common duct stones); (3) persistent melanuria, which contradicts the belief that melanuria is pathognomonic of melanosarcoma, usually with extensive liver invasion and hopeless prognosis; (4) varying liver function tests; and (5) ready corroboration of the diagnosis by the gross and microscopic findings, which are similar and characteristic. The biopsy material from the liver always shows a characteristic black, greenish-black, or brownish-black color. On microscopic examination the most striking diagnostic feature is the presence of innumerable dark brown pigment granules. Clinically the disease is a benign, chronic process, not disabling or productive of any distinguishing symptoms. Some patients have been followed for as long as 10 years, and there has been no progressive liver failure. This new entity has been confused with obstructive jaundice and chronic viral hepatitis, as well as with Gilbert's disease. These conditions, as well as others, can be excluded by the pathognomonic histological appearance of the liver in needle biopsy studies. It is important for internists, and particularly gastroenterologists, to be aware of this condition and to recognize its pathognomonic histological features in order to prevent erroneous diagnosis and unnecessary surgical procedures, as well as to assure the patient of a good prognosis.

Experimental Food-Poisoning by Clostridium Welchii. F. E. Dische and S. D. Elek. Lancet 2:71-74 (July 13) 1957 [London].

Three strains of heat-resistant type-A Clostridium welchii isolated in food poisoning outbreaks were used. The volunteers were 41 healthy adults aged 20 to 50, mainly medical students and medical staff. The preparations were added to the soup course of a luncheon. About 6 tests were done at a time, and controls consisting of sterile Robertson's medium were included, the subjects being kept in ignorance of the nature of the preparation they were receiving. After the meal they continued their normal activities and recorded any symptoms.

Cultures of a strain obtained originally from a food poisoning outbreak produced in most of the volunteers a short attack of diarrhea and abdominal pain after an incubation period of about 12 hours. The symptoms were identical with those in the naturally occurring outbreaks, and this is considered evidence that heat-resistant Cl. welchii type A can cause food poisoning. A second strain gave indefinite results, while a third appeared to be inactive. This fact suggests that virulence may be lost and may account for the negative findings of other workers. Bacterium-free culture filtrates and cultures which had been heated to 100 C did not produce symptoms, but positive results occurred with live cultures and suspensions. It appears probable that the illness is due to a mild transient infection. No significant rise in titer of circulating Cl. welchii alpha antitoxin could be demonstrated after an attack. Cl. welchii alpha toxin is unlikely to be concerned in the disease. Heat-resistant Cl. welchii spores were found in the stools of 97% of the volunteers after the feeding tests; of the controls, 15.6% excreted the organism. An apparent association between the hospital environment and a high carriage-rate was noted, but the explanation is obscure. An attack did not confer protection against a further attack. In circumstances where it is necessary to

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The place of publication of the periodicals appears in brackets preceding each abstract.

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eat food that may contain Cl. welchii, infection is unlikely if the food is boiled shortly before consumption.

The Houssay Syndrome. R. J. Calvert and G. Caplin. Brit. M. J. 2:71-74 (July 13) 1957 [London].

The Houssay animal (with both pancreas and anterior pituitary removed) exhibited diminished glycosuria, negligible ketosis, increased insulin sensitivity, survival for several months without insulin treatment, widely fluctuant glycemia, and a tendency to progressive undernutrition and to hypoglycemic episodes. The clinical counterpart, due to natural disease, excluding acromegaly and parapituitary tumors, termed the Houssay syndrome, is apparently rare, only 17 well-documented cases having been reported since Houssay's observations. The authors report one further case. The variable clinical pattern of hypopituitary coma includes 3 standard types—namely, pyrexial, hypothermic, and hypoglycemic—and a 4th miscellanous form. It is further characterized by no predilection to sex, a frequently ill-explained hypopituitarism, a high fatality rate, and a lack of specific clinical features. The recognition of the Houssay change is important, as once-safe insulin dosage may otherwise be fatal. Histological findings in the authors' patient included adenocarcinoma of the pancreas; extensive anterior pituitary necrosis; secondary carcinoma in the liver; and glomerular inflammation. For treatment, the judicious use of antibiotics is important and cautious insulin therapy and cortisone therapy are mandatory.

Diuretic Effect of Heparin, Particularly in Patients with the Nephrotic Syndrome. C. L. H. Majoor, H. Prenen, P. J. J. van Munster and R. J. A. F. M. Schlatmann, Nederl. tijdschr, geneesk. 101:1301-1307 (July 13) 1957 (In Dutch) [Haarlem, Netherlands].

The intravenous injection of 300 mg. of heparin daily in a 22-year-old man with the nephrotic syndrome caused profuse water and sodium diuresis after corticotropin, prednisone, salt restriction, and mercurial diuretics had been practically ineffective in earlier therapeutic trials. Increased salt and water excretion was measurable after 36 hours and reached maximal values 96 hours after the onset of heparin therapy. After the heparin was withdrawn, the diuresis returned to pretreatment levels in about the same time. The administration of bishydroxycoumarin preparations did not produce a diuretic effect. The authors regard it as unlikely that the diuretic effect of heparin is the result of changes which this drug produces in the lipoproteins of the serum. Heparin treatment was followed by increased diuresis in another patient with the nephrotic syndrome, in a woman with edema caused probably by bilateral femoral thrombosis, and in a man with coronary insufficiency without heart failure. Detailed balance studies in this patient revealed slight potassium retention and an unusual type of nycturia, in addition to profuse sodium diuresis during heparin therapy. It is suggested that heparin induces these effects by suppressing the adrenal cortical function.

Oral Treatment of Subacute Bacterial Endocarditis with Phenoxymethyl Penicillin (Penicillin V). C. A. Santos-Buch, M. G. Koenig and D. E. Rogers. New England J. Med. 257:249-257 (Aug. 8) 1957 [Boston].

The authors treated 6 patients with penicillin-sensitive streptococcic endocarditis by administration of large doses of phenoxymethyl penicillin (penicillin V) combined with streptomycin and dihydrostreptomycin. Clinical and bacteriological cure was achieved in all. Serum penicillin levels were maintained above 1.6 units per milliliter in 5 of the 6 patients, with peak levels averaging 22.3 units per milliliter. There was no evidence of accumulation of penicillin in the serum on continuous therapy. Signs of vestibular damage appeared in 3 patients late in the course of, or after cessation of, streptomycin therapy. The occurrence of vestibular damage thus was greatly in excess of previous experience, and the reason for this has not been established. Two patients had nausea and vomiting of sufficient severity to interfere with therapy and failed to have an adequate penicillinemia until probenacid was administered concurrently. The later finding indicates that serum penicillin levels must be routinely determined when patients with penicillin-sensitive streptococcic endocarditis are treated by the oral route to assure that an adequate penicillinemia is maintained.

The oral administration of 2 million units of penicillin V to normal persons resulted in higher and more sustained blood levels than those obtained with equal doses of penicillin G by mouth. Peak serum penicillin V levels averaged 1.5 to 2.1 times those obtained with penicillin G by mouth. Superior serum levels were noted when penicillin V was ingested after meals. Simultaneous administration of aluminum hydroxide gel tended to depress subsequent serum penicillin levels. Until predictable and uniform absorption of the antibiotic by mouth is assured, parenteral administration of penicillin remains the preferred treatment for the majority of patients with bacterial endocarditis.

Colorado Tick Fever: Observations on 18 Cases and Review of the Literature. C. C. Drevets. J. Kansas M. Soc. 58:448-455 (July) 1957 [Topeka].

Colorado tick fever was described in 1855 under the term "mountain fever" as an acute, benign, intermittent, nonexanthemic febrile disease. About 1873 an exanthemic fever (Rocky Mountain spotted fever) was first described, and this proved to be much more serious. For several decades the mountain fever was confused with the spotted fever and was usually considered a mild form of the latter; earlier, the observers of both considered them separate diseases. In 1930 Becker described the clinical findings and proposed the name Colorado tick fever, and Toomey subsequently referred to it as American mountain tick fever. Florio and associates in 1944 transmitted the disease experimentally in humans and in hamsters. They showed the causative agent to be a filterable virus transmitted by the bite of the wood tick, Dermacentor andersoni Stiles. The virus has been isolated and has been transmitted to a number of species of laboratory animals. The geographic distribution of Colorado tick fever follows the distribution of the wood tick, chiefly in the western mountain states.

The author presents clinical, physical, and laboratory findings in 18 patients with Colorado tick fever, observed during the summer of 1955 in the Estes Park Clinic in Colorado. The disease is characterized by a history of contact with a wood tick and the sudden onset of fever, chills, malaise, anorexia, headache, muscular aches and pains, and some less consistent symptoms. The fever curve is of the saddle-back type; an initial fever period lasting about 48 hours is followed by a remission of from 1 to 3 days duration, which in turn is followed by another bout of fever. The chief laboratory finding is a marked leukopenia. The virus can be isolated from the blood during the acute phase, and complement-fixing and neutralizing antibodies are demonstrable during the convalescent phase. Treatment is symptomatic, and the prognosis is favorable. Avoidance of the tick is the most effective preventive measure. It is becoming increasingly important for physicians outside the endemic area of this disease to be able to diagnose Colorado tick fever since the areas of exposure are often frequented by tourists who can easily journey to their homes before the symptoms appear.

Unusual Clinical Features Associated with Severe Aortic Insufficiency. W. P. Harvey, J. P. Segal and C. A. Hufnagel. Ann. Int. Med. 47:27-38 (July) 1957 [Lancaster, Pa.].

Over 300 patients with severe aortic insufficiency of varying etiology were investigated by the authors during the last 5 years. A number of unusual clinical features were observed: 1. Sudden death was most frequent in patients with previous ventricular extrasystoles, usually with advanced stages of heart disease, and it is attributed to ventricular fibrillation. 2. Excessive sweating was observed in the majority of patients and was usually proportional to the clinical stage of congestive failure. Intolerance for heat frequently suggested hyperthyroidism, although no augmentation of thyroid activity can be demonstrated. 3. Cervical (carotid artery) pain occurred that was frequently bilateral and located over the carotid arteries; it generally lasted from 5 to 7 days and could be alleviated only by the use of narcotics. It appeared to originate in the arteries themselves, although there is no proof for this concept. 4. Abdominal pain occurred; this was nonspecific and might simulate peptic ulcer, disease of the gallbladder, pancreatitis, and even renal colic. No organic gastrointestinal lesions were found. The suggestion that it originates in the abdominal aorta has not been proved. 5. Pounding sensations were noted that resulted from severe degrees of aortic regurgitation; if their rhythm is regular they can be tolerated. 6. Angina pectoris occurred in about 50% of the cases; it was not unusual in its manifestations, except that it occurred chiefly at night and was of prolonged duration. It was common in severe aortic insufficiency of rheumatic and also of syphilitic origin. Other unusual aspects were splash sounds, clicking sounds produced by the plastic artificial valve, the association of rheumatoid arthritis with severe aortic insufficiency, the association of coarctation of the aorta with severe aortic insufficiency, and the association of Marfan's syndrome with severe aortic insufficiency.

Acute Benign Pericarditis Associated with Coxsackie Virus Group B, Type 5. S. B. Weinstein. New England J. Med. 257:265-267 (Aug. 8) 1957 [Boston].

The author reports a 25-year-old man with acute benign pericarditis associated with the significant serologic evidence of infection with Coxsackie virus group B, type 5. This disease is usually considered to be a clinical syndrome of unknown origin. It has long been believed that a variety of agents may produce this syndrome. In recent years there is a tendency to associate pericarditis with viral causation, but proof is still missing. Pericarditis has also been linked to Bornholm disease, which is often caused by the Coxsackie group of viruses. With increased knowledge of the Coxsackie viruses and identification of various new types more accurate testing has resulted. It is therefore possible that with the recognition of these new types more data will accumulate to show their relation to human disease.

Diet and Coronary Thrombosis: Hypothesis and Fact. J. Yudkin. Lancet 2:155-162 (July 27) 1957 [London].

It is widely believed that coronary thrombosis is related to the amount of fat, or of a particular sort of fat, in the diet. However, some of the epidemiological data do not fit these simple hypotheses, and it appears that both the proponents and the opponents of a dietary hypothesis are quoting only those data which support their view. In relating diet to the mortality from coronary thrombosis the author draws on 3 different sorts of statistics. The first is a comparison between diets and coronary mortality in different countries for the same year. The second comparison is between diets and coronary mortality in different classes in Britain. The third comparison is between trends in diets and trends in coronary mortality in Britain since 1928. A consideration of all the data presented suggests that a unitary dietary theory, however modified by considerations of lag, of threshold, and of individual variation in dietary intake, is less plausible than a theory of multiple causes. It is suggested that relative overconsumption of food, associated with reduced physical exercise, may be one of several causes of the disease. These causes are likely to be divisible into predisposing causes and precipitating causes. Their identification requires more study of groups where some of the possible causes are relatively constant, so that differences in incidence of coronary disease may be related to the other possible causes.

Brucella Myocarditis: Observations on Patients Reported in the Literature and on a Group of Patients Seen in the Past Ten Years in the Medical Clinic of the University of Florence. P. Panuccio. Sett. Med. 45:251-263 (May 15) 1957 (In Italian) [Florence, Italy].

The frequency of myocarditis was studied in 137 patients, 93 male and 44 female, with brucellosis in a large Florence hospital in the last 10 years. Twenty-five patients (15 male and 10 female) presented clinical or roentgenological symptoms of cardiovascular disturbance caused by brucellosis in 22; the other 3 patients had suffered latent rheumatic infection. The 22 patients with cardiovascular disturbance caused by brucellosis were 13 to 68 years old and had had the infection for an average of 3 months. The blood pressure was normal in 11 patients and below normal in the other 11. Except for 1 patient, hypotension was found in patients over 50 years of age; in 2 of these subjects the infection ran a severe septic course. Three patients seen soon after contracting the disease presented bradycardia; the course of the infection was typical in 2 patients, and in the third patient a systolic murmur was observed on the 34th day of the disease.

Two patients presented definite myocardial involvement within a month after contracting the infection. The first was a 19-year-old male who for 30 days before entering the hospital had fever, profuse perspiration, asthenia, and mild hepatosplenomegaly. The patient was treated first with chloramphenicol and later with terramycin. The course of the disease was typical for 40 days, when tachycardia, hypotension, respiratory oppression, irregularities in the first tone, and enlargement of the cardiac area were observed. Electrocardiograms revealed disturbance in the conduction within the right ventricle and anterior ischemia. These symptoms improved on the 50th day, when the clinical symptoms had also improved, and the patient was dismissed from the hospital. The second patient, a 68-year-old diabetic, presented symptoms similar to those of the first patient; however, the age of the patient and the presence of diabetes had also to be taken into consideration in making the diagnosis.

Postcomissurotomy Syndrome. S. Z. Rosenberg, K. Braun and S. Stern. Harefuah 53:1-4 (July 1) 1957 (In Hebrew with English Summary) [Tel Aviv, Israel].

Seventy-five patients who underwent mitral valvulotomy were followed up for at least 10 months after the operation. A postcomissurotomy syndrome with a benign and self-limited course developed in 20 patients (27%). Fever and chest pain were the commonest symptoms, but they usually subsided after a few days. Other less common symptoms were dyspnea, tachycardia, pain in the joints, and pleural or pericardial effusion. Laboratory examination revealed moderate leukocytosis and increased erythrocyte sedimentation rate in all. About 50% of the patients had recurrent attacks of the syndrome, which apparently had no deleterious effect on the late results of the operation. There was no correlation between the incidence of Aschoff bodies in the left atrial appendage removed at the operation and the occurrence of the syndrome.

Anamnesis in Patients with Bronchial Carcinoma. F. K. Feiks. Krebsarzt 12:208-219 (No. 4) 1957 (In German) [Vienna].

In investigating the increase in bronchial carcinoma, the author gave particular attention to certain habits (smoking and drinking) and to occupational exposures in two groups of patients with carcinoma of the respiratory tract and their controls. The first group comprised 93 patients with carcinoma of the respiratory tract and their controls observed in the author's department between 1953 and 1956; the second group comprised 4,206 patients with carcinoma of the respiratory organs observed between 1950 and 1954 at the public hospitals in Vienna and whose records were available from the Austrian Cancer Society; 1,030 patients without cancer served as controls for this group. In summarizing the data presented in tables and diagrams the author shows that the right upper lobe was more frequently involved than the other lobes. There was no evidence of a hereditary predisposition to carcinoma. A history of bronchitis or of pulmonary tuberculosis was no more frequent in the patients with carcinoma than in the controls. Infectious diseases with high fever were less frequent in the history of patients with carcinoma than in the controls. Pain in the region of the thorax and influenza-like and pneumonia-like conditions were often early symptoms of carcinoma.

The first examination by a practitioner or even by a specialist resulted in the diagnosis of carcinoma in only about one-third of the patients. There was no difference between patients and controls as regards the consumption of alcohol, but there were decided differences with regard to smoking. Statistics on the occurrence of respiratory cancer in nonsmokers and in light, moderate, and heavy smokers were highly significant. Occupations involving contact with metals, dust, smoke, and motor vehicles were more frequent among the patients with carcinoma of the respiratory organs than in the controls, but occupational exposures did not prove as important as excessive smoking. Especially noteworthy was the more frequent occurrence of laryngeal and bronchial carcinoma in farmers than in persons with other occupations. Unusually frequent and statistically significant was the number of carcinoma patients among the excessive smokers and among those whose occupation exposed them to chronic irritation of the respiratory tract. The findings in the smaller group of 93 patients coincided in all essentials with those in the large number, and thus they can be regarded as representative.

On the Natural History of Esophageal Varices Which Are Secondary to Portal Cirrhosis. E. D. Palmer. Ann. Int. Med. 47:18-26 (July) 1957 [Lancaster, Pa.].

Serial esophagnoscopic examinations, with portal pressure determinations in some cases, were made of the esophageal varices of 133 patients with biopsy-proved cirrhosis of the liver over an average period of 32.6 weeks. It was found that the varices changed in diameter and extent from time to time, with only the slightest tendency to improve as the general clinical course improved and to worsen as the clinical course worsened. Increasing stability was noted as the varices became larger and more extensive. There was no correlation between the apparent duration of the cirrhosis and either varix severity or stability. In 25% of the patients, at least, one examination showed that the varices had disappeared, but this proved to be a temporary disappearance whenever the subsequent course could be adequately followed. In some patients varices disappeared and reappeared very rapidly, these changes being usually without relationship to changes in the general clinical state.

The level of the portal venous pressure showed no correlation with the diameter or extent of the varices, and could not be estimated even roughly from the esophagoscopic appearances. The pressure, like varix severity, varied considerably from time to time, without relation to changes in the clinical picture. In the individual patient, however, it was found that varices did not become smaller when the pressure rose or larger when it fell. It is concluded that the failure of portal hypertension and varix severity in cirrhosis to demonstrate a predictable pattern of behavior indicates that the native portacaval shunting systems (variceal, retroperitoneal, falciform-paraumbilical, hemorrhoidal, etc.) do not act in concert but with a large degree of passive independence. Variations in volume flow through the usual transhepatic venous channels add to the variability of transvariceal flow.

Significance of the Calcinosis Factor (Vitamin D, Dihydrotachysterol) in Therapy of Tuberculosis. F. Holtz and H. Frohberg. Beitr. Klin. Tuberk. 117:265-275 (No. 2) 1957 (In German) [Berlin].

The results obtained by treatment of tuberculosis with calciferol and dihydrotachysterol are based not, as frequently assumed, on a rickets-preventive action but on the effect produced by the calcinosis factor. Calciferol and dihydrotachysterol, when administered in large doses, raise the serum calcium level. This is achieved partly by an increased absorption of calcium in the intestine and partly by mobilization of calcium in the organism. The increased calcium serum level causes obturation of the vascular walls and the endothelium of the serosa, a fact that favors the cure of recent exudative tuberculous processes. Caseous tuberculous foci calcify more rapidly and more intensively with calciferol and dihydrotachysterol. Treatment with tuberculostatic agents combined with the factor of calcinosis gave good results.

Anoxia in Emphysema: Its Relief by Oxygen. T. Simpson. Lancet 2:105-113 (July 20) 1957 [London].

Death may take place after 20 to 30 minutes' exposure at an altitude of 25,000 ft. or more where the oxygen saturation is less than 50%. A respiratory infection in an emphysematous patient is capable of producing an oxygen saturation of 50% or less. Anoxia in these patients should be relieved at the risk of carbon dioxide narcosis. The macroscopic changes resulting from anoxia in the human brain are hyperemia, congestion, and focal hemorrhage of the gray and white matter. More severe mental disturbances as a result of respiratory infection in the emphysematous patient appear to be associated with a lower arterial oxygen saturation and pH rather than with an alteration in the arterial carbon dioxide tension. The role of hypercapnia in the production of mental changes is minimized as the carbon dioxide tension did not rise above 80 mm. Hg. Drowsiness may be the only sign in an otherwise asymptomatic emphysematous patient. Muscular (voluntary) tremor and incoordinate movements are common in the severely anoxic emphysematous patient. Anoxia increases the heart rate and often lowers the blood pressure. The acute anoxia of respiratory infection can result in acute cardiac dilatation and ultimately congestive heart failure, and at the oxygen saturation level of these patients (20 to 50%) a circulatory crisis usually develops. The blood changes in emphysema are as follows: the mean corpuscular volume (M. C. V.) is usually increased, there is a significant negative correlation between the oxygen saturation and capacity, the number of reticulocytes and the serum bilirubin level are normal, the bone marrow shows a normal percentage of erythroid cells, and polycythemia is rare and is usually associated with severe anoxia and heart failure. The low oxygen tension of the liver predisposes the liver cells to damage in anoxia, unlike the kidneys where macroscopic assessment discloses some congestion in an unaltered architecture. No changes in the glomeruli were attributed to anoxia. The administration of gradually increasing amounts of oxygen is emphasized in order that the respiratory center not be depressed and compensation take place over an extended interval of time. One relatively rare danger of oxygen therapy is described as it occurred in a single patient—oxygen addiction. Coma resulting from oxygen therapy is not necessarily fatal, and severe hypercapnia is compatible with a normal mental state. Severe irreversible anoxia can cause irreversible changes in the human organs. Whereas the ill-effects of carbon dioxide narcosis may be reversible, those of unrelieved anoxia are not.

Conditions Involving the Hemopoietic System Resulting in a Pseudorheumatoid Arthritis; Similarity of Multiple Myeloma and Rheumatoid Arthritis. J. S. Davis, F. C. Weber and H. Bartfeld. Ann. Int. Med. 47:10-17 (July) 1957 [Lancaster, Pa.].

A number of isolated cases of multiple myeloma were originally diagnosed as rheumatoid arthritis. At St. Luke's Hospital in New York, 26 patients with multiple myeloma have been observed since 1931. The first symptom in 22 of these patients was joint pain, generally involving the spine. Arthritis of some type was the primary diagnosis in 16. Two of the patients were treated for a long period for rheumatoid arthritis. In these 2 and in the patients with multiple myeloma associated with rheumatoid arthritis reported in the literature, postmortem studies revealed amyloid deposits in and about the joints. One patient with Hodgkin's disease and 1 patient with erythremic myelosis were thought to have rheumatoid arthritis and were treated for this for a long period. Rheumatoid arthritis may be a result of an abnormality in protein metabolism resulting in the deposition of some protein substance, either amyloid or other, in and about the joints, followed by reactions in the synovial and other tissues of the joints involved.

Treatment of Primary-Secondary Syphilis with 15 Million Oxford Units of Penicillin After 3 Injections of Mercury Cyanide: 10-Year Account. M. Bolgert and G. Levy. Presse méd. 65:1267-1269 (July 6) 1957 (In French) [Paris].

Sixty-two patients with primary syphilis and a negative serologic test, 107 with primary syphilis and a positive serologic test, and 137 with secondary syphilis were treated by the authors' method. The patients received 1 intravenous injection of 0.1 Gm. of mercury cyanide on 3 successive days. For the next 3 days they were given 1 million Oxford units of penicillin in daily injections of 200,000, 300,000, and 500,000 units dissolved in isotonic sodium chloride solution; each of these doses first was administered in 8 and later in 5 divided doses. For the next 14 days the patients received 500,000 Oxford units of penicillin in the morning and 500,000 units in the evening of each day. The penicillin therapy was discontinued after 17 days when a total dose of 15 million units of the drug had been given. Clinical and serologic examinations were performed every 14 days until the patients had negative reactions to both the flocculation and complement fixation tests. The examinations were repeated at 3-month, at 4-month, and at 6-month intervals and finally once a year. Of the 306 patients, 63 were lost to follow-up, but 43 of the 63 had negative reactions to serologic tests for several hundred days. Of the remaining 243 patients whose follow-up examinations were continued for periods up to 113 months, 230 obtained satisfactory results. They were clinically normal and had negative serologic tests. Seventeen of these became reinfected. Thirteen of the 243 patients were therapeutic failures. Of these, 2 were considered as clinical failures, 4 were considered as questionable, and 7 had positive reactions to serologic tests in the absence of clinical manifestations. All lumbar punctures except in one patient gave normal results. None of the 37 children born to mothers who were given this treatment manifested congenital syphilis. The conclusion seems justified that 94.5% of the results were definitely satisfactory.

Pharyngo-conjunctival Fever: School Outbreaks in England During the Summer of 1955 Associated with Adenovirus Types 3, 7, and 14. E. J. C. Kendall, R. W. Riddle, H. A. Tuck and others. Brit. M. J. 2:131-136 (July 20) 1957 [London].

Clinical, laboratory, and epidemiologic features of outbreaks of pharyngoconjunctival fever associated with adenovirus infection in 7 residential schools for boys in England during the summer of 1955 are described. The illness was characterized by 3 to 5 days' fever, sore throat, blocked nose, enlarged cervical lymph nodes, and painless conjunctivitis. A detailed clinical description based on the study of 169 patients in 2 of the outbreaks is given. Serologic evidence of adenovirus infection was obtained in all 7 outbreaks, and virus strains were isolated from throat washings or eye swabs from 52 patients in 5 schools where this was attempted. Three of the outbreaks appeared to be caused by type 3 virus, 1 by type 7, and 1 by type 14. In 3 schools in which the influence of age on susceptibility was studied, illness attack rates fell with rising age.

Acute Renal Failure Following Intravascular Haemolysis. G. M. Bull, A. M. Joekes and K. G. Lowe. Lancet 2:114-117 (July 20) 1957 [London].

Sixteen patients had acute renal failure associated with known or probable intravascular hemolysis; in 13 this followed blood transfusion and was due chiefly to technical errors in cross matching, while the other 3 cases were due to an unexplained hemolytic episode following pregnancy, a severe hemolytic episode in falciparum malaria, and a fatal hemolytic episode following splenectomy in nocturnal hemoglobinuria. The acute renal failure seen in the hemolytic transfusion reactions and in 2 other cases possibly involving intravascular hemolysis was comparable to the acute renal failure seen in poisoning, criminal abortion, and the concealed accidental hemorrhage of pregnancy. Of the 13 patients experiencing hemolytic transfusion reactions only 5 recovered. With modern standards of careful conservative management supplemented by dialysis, 5 of the 8 deaths could probably have been avoided, as the real need of transfusions was sometimes questioned. The mortality in tubular necrosis due to transfusion reaction will in all likelihood be higher than that due to poisons, criminal abortion, or concealed accidental hemorrhage for the simple reason that the patients who have had transfusion carry the added burden of the primary disease that necessitated transfusion initially. Age is a prime consideration here, as older patients tolerate protracted anuria badly. One case of transfusion reaction (nonhemolytic) due to contaminated blood is reported, as is one unexplained nonhemolytic episode. No renal failure following intravascular hemolysis due to accidental infusion of distilled water or to irrigation with distilled water at prostatectomy was reported.

Severe Diabetes with Remission: Report of a Case and Review of the Literature. R. Harwood. New England J. Med. 257:257-261 (Aug. 8) 1957 [Boston].

The author reports an unusual remission of severe diabetes in a 24-year-old man with diabetic acidosis. During 9 hours after his admission to hospital the patient was given 130 units of crystalline insulin and 4 liters of fluid parenterally, mostly as an 0.85% solution of sodium chloride. The blood sugar level fell and the acidosis was quickly corrected. He was regulated on a diet of 300 Gm. of carbohydrate, 130 Gm. of protein, and 120 Gm. of fat (2,800 calories). He was discharged from the hospital 2 weeks later, well controlled on 80 units of lente insulin. The urine remained entirely free of sugar for the next 3 months, and, because of consistently low blood sugar tests, the dose of lente insulin was gradually reduced to 50 units. After a moderately severe attack of hypoglycemia, the dose of insulin was reduced to 25 units daily, and administration of insulin was discontinued after another mild attack of hypoglycemia. No change was made in the diet.

The brief duration of the acute symptoms and the whole-hearted cooperation of the patient doubtless favored the recovery that permitted him to live on a mildly restricted diet without insulin up to the time of publication, 23 months later. Only few cases of similar recovery after acidosis in adults were collected from the literature, but these suggest that restoration of function of the islands of Langerhans in early diabetes is always a possibility and that attempts to achieve this by the strictest control with diet and insulin should make such remissions a more common occurrence.

SURGERY

Resection and Homograft Replacement of Innominate and Carotid Arteries with Use of Shunt to Maintain Circulation. M. E. De Bakey and E. S. Crawford. Surg. Gynec. & Obst. 105:129-135 (Aug.) 1957 [Chicago].

Aneurysm, tumor, arteriosclerotic fistula, and arteriosclerotic occlusion can involve the innominate and carotid arteries to the extent that excisional therapy is necessary to maintain normal circulatory dynamics. This type of therapy for lesions in other arteries of this same size is usually accomplished with technical ease and a lack of physiological disturbances and neurological sequelae. Surgical excision of lesions of the innominate and carotid arteries is complicated by (1) their location within the thorax, the need for adequate exposure necessitating a combined neck and chest approach, and (2) the necessity of temporary circulatory arrest in vessels supplying the acutely anoxia-sensitive brain, in which brief periods of arrest may produce severe ischemic damage. Proper exposure was obtained in the single reported case with use of a combined cervicothoracic approach without clavicular removal. This type of approach is advocated, as it has the advantage of providing direct and generous accessibility to the arteries both proximal and distal to the aneurysm, permitting safe control of these vessels facilitating the use of a shunt, and stable wound repair with complete restoration to normal of the anatomic and functional relationships of the neck and thorax minimizing postoperative pulmonary disturbances. No correlation exists between the duration of the period of circulatory arrest and the occurrence of neurological disturbances. The variability in the tolerance of the brain to different periods of carotid occlusion is dependent on a number of factors: age, nature of the lesion, and, particularly, development of adequate collateral circulation. Hypothermia and the use of a temporary shunt have been used to protect the brain against ischemic damage consequent to temporary arrest of the carotid or innominate circulation. The maintenance of normal cerebral circulation during as well as after operation, considered the most effective solution to the problem, is obtained by using a shunt consisting of a segment of tygon tubing with lucite cannulas at each end of the bypass. The use of the lucite cannulas at the end of the shunt has been found to be a significant factor in the occurrence of transient hemiplegia immediately after operation, in contradistinction to the utilization of 14-gauge and 16-gauge needles, with which the blood flow is considerably less. This method of bypass employing polyvinyl tubing with specially tooled lucite cannulas is adjudged the most satisfactory procedure because of its simplicity of application and its efficacy in providing complete protection against ischemic damage to the brain during excisional therapy for disease of the innominate or carotid arteries.

Calciuria as an Indicator of the Efficacy of Hormone Therapy in Metastasized Mammary Carcinoma. J. Gerbrandy and H. B. A. Hellendoorn. Nederl. tijdschr. geneesk. **101**:1257-1263 (July 6) 1957 (In Dutch) [Haarlem, Netherlands].

Various forms of hormone treatments were used in treating 40 patients with mammary carcinoma and osteolytic metastases. Androgenic hormones were given 63 times, cortisone 12 times, oophorectomy was performed 9 times and adrenalectomy 7 times (in 4 of the latter oophorectomy was done simultaneously). Androgenic hormones were given also to 5 additional patients in whom osteolytic bone metastases and hypercalciuria resulted from carcinoma of the bronchus or the kidney. The clinical results obtained with these forms of hormone therapy were compared with simultaneous changes in the urinary excretion of calcium. It was found that in patients with osseous metastases and calciuria favorable results of hormone therapy are always accompanied by a fall of the urinary excretion of calcium to normal or subnormal levels. However, a fall in calciuria is not necessarily accompanied by clinical improvement. This may be due to the nonspecific anabolic effect and to the calcium retention produced by the sex hormones. A renewed rise in calcium excretion is always accompanied by clinical exacerbation. Regular checking of calciuria and of the calcium content of the blood are indispensable in judging the results of hormone therapy in patients with breast carcinoma with osteolytic metastases. These tests are valuable also in ascertaining whether androgenic hormones cause increase in tumor growth and in diagnosing acute spontaneous hypercalcemia.

Intraductal Papilloma of the Breast. J. W. Hendrick. Surg. Gynec. & Obst. **105**:215-223 (Aug.) 1957 [Chicago].

A follow-up from 5 to 18 years of 208 patients with intraductal papilloma revealed that these patients were no more likely to develop carcinoma of the mammary gland than a like number of women in the same age group without the intraductal papilloma. J. C. Bloodgood regarded intraductal papilloma as a relatively innocuous lesion and did not believe it to be precancerous. He believed that a serosanguineous or bloody nipple discharge was caused by the intraductal papilloma and not by a carcinoma. He advised local excision, and felt that a mastectomy was too radical for a benign breast lesion and inadequate for a malignant tumor. The presenting symptom in the majority of the 208 patients was a serosanguineous or bloody discharge from the nipple, a symptom which has been seen even more frequently in recent years due in part to the instructive work of several agencies in disseminating information on cancer control. The greatest incidence of this disorder occurred between the ages of 30 and 50 years, which is approximately 5 years earlier than in another group of 452 patients with primary carcinoma of the breast. Symptomatology included a spontaneous, serosanguineous nipple discharge in 190 (91%), a tumor mass in 96 (46%), and pain and inflammation in 41 (20%).

All of the patients (157) in whom the intraductal papilloma was observed in the areolar area of the breast had a nipple discharge, in contrast to 33 of 51 patients (64%) having a lesion in the periphery of the breast. Twenty-two patients had deformed nipples produced by the tumor, 14 having slight nipple retraction and 8 having a fulness produced by the disturbed duct causing a disturbance in the contour of the nipple. Twenty-four patients had a dimpling or retraction of the skin; the lesion was located in the periphery in 16 and in the areolar area in the remaining 8. Pathological differentiation of benign and malignant papillary diseases is rarely a problem when the duct wall is intact. Differential diagnosis of intraductal papilloma must first exclude "cystic disease" of the breast, primary carcinoma, fibroadenoma, adenosis, ectasia of the ducts, fat necrosis, and chronic abscess. Point pressure testing is used to elicit a nipple discharge in order to determine which duct contains secretion. The presence of intraductal papilloma, as evidenced by serosanguineous or bloody nipple discharge or a palpable tumor, is adequate justification for its removal. A very ingenious method of excising a duct involved by intraductal papilloma described by Babcock is reported as being used by a number of surgeons with excellent results, treatment of intraductal papilloma consisting of removal of the involved duct and its tributary breast parenchyma.

Scalene Node Biopsy: Its Value as a Diagnostic Aid in Chest Diseases. P. Schiff and B. A. Warren. Dis. Chest. 32:198-206 (Aug.) 1957 [Chicago].

The easily accessible scalene lymph nodes lie in close proximity to the thoracic lymph nodes, and their biopsy has been suggested as a diagnostic aid in intrathoracic lesions, because, despite refinements in roentgenoscopy, cytological study of the sputum, bronchoscopy, bronchoscopic biopsy, thoracoscopy, and exploratory thoracotomy, the exact diagnosis in intrathoracic disease is still difficult in some patients. In order to show how often pathological changes in these nodes may be correlated with changes elsewhere in the body, particularly with those of intrathoracic origin, the authors present their findings on the scalene lymph nodes in a consecutive series of routine autopsies. In 123 autopsies, in which nodes from both sides of the neck were examined, the over-all incidence of positive findings was 16.3%; 45.5% were positive in cases in which lymph node involvement would have been possible. The incidence and distribution of scalene node changes in cases of abdominal malignancy supported the hypothesis that the left node is involved first in such cases.

The authors list the following indications for biopsies of the scalene lymph nodes: (1) in obscure intrathoracic conditions to establish a diagnosis such as in carcinoma or in sarcoidosis of the lung; (2) in patients in whom the diagnosis is certain but in whom involvement of these nodes will affect the prognosis, treatment, or management, i. e., when carcinoma of the lung has metastasized to the scalene nodes; and (3) for diagnosis of disease involving lymph nodes, e. g., leukemia, Hodgkin's disease, and lymphosarcoma.

Acute Postgastrectomy Pancreatitis. C. C. Burton, W. G. Eckman Jr. and J. Haxo. Am. J. Surg. 94:70-79 (July) 1957 [New York].

Acute hemorrhagic or necrotizing pancreatitis arising as a complication of gastrectomy is rare. The mortality rate due to acute pancreatitis was 0.7% in 1,689 patients who underwent gastric resection. In another series of 348 patients there were 5 deaths (1.4%) from pancreatitis. The most frequent and important causative factors of pancreatitis were trauma to the head of the pancreas and injury to the biliary or pancreatic ducts. Vagotomy with antral gastrojejunostomy should be given priority in patients in whom the ulcer penetrates the pancreas. Resection of the involved duodenum should be performed when hemorrhage is the predominant symptom. It may be advisable to limit the operative procedure to simple ligation of the bleeding vessel with closure in the poor-risk patient. Anomalies of the biliary and pancreatic ductal system and of the blood supply to the duodenum and pancreas occur with sufficient frequency to emphasize the need for the gastric surgeon to be familiar with these variations. The author warns against excision, curettage, or cauterization of the base of the ulcer. Many diagnostic, clinical, and therapeutic features of acute pancreatitis remain still unsolved.

Bleeding in Colonic Diverticulitis. J. E. Mobley, M. B. Dockerty and J. M. Waugh. Am. J. Surg. 94:44-51 (July) 1957 [New York].

Pathological, clinical, and follow-up studies were made on 32 patients with colonic diverticulitis associated with bleeding. There were 19 men and 13 women, and their ages ranged from 26 to 77 years; only one patient was under 40, and 3 were more than 70 years old. Gross blood has passed from the rectum by all the patients. Bleeding was mild in 12, moderately severe in 19, and severe in one of the patients. The duration of bleeding varied from less than 3 months to 5 years. Rectal bleeding was overshadowed by other symptoms in 25 patients, such as abdominal pain, chills, fever, diarrhea, decreased caliber of stools, constipation, and dysuria. Abdominal tenderness was encountered in 15 patients, extrarectal mass in 9, mass in the left lower abdominal quadrant in 6, and intrarectal mass in 2. Most of the patients had physical findings suggestive of diverticulitis, but the results of examinations were completely negative in 7 (22%). On 29 patients proctoscopic examinations were made. Bleeding zones were seen in the intestinal mucosa of 2 patients. Entirely negative results of proctoscopic examination were recorded for 7. The other patients had pathological proctoscopic findings unrelated to the rectal bleeding. Definite diagnosis of diverticulitis was made after roentgenologic examination in 18 of the 30 patients; this diagnosis was suggested in 4 others. Definite roentgenologic diagnosis of carcinoma was reported in only one patient. In the remaining patients the presence of a neoplasm in the colon was considered. Surgical exploration was performed on 31 patients. In one only was the problem of bleeding the sole surgical indication. Five different types of operative procedures were performed. Two patients died: 1 of peritonitis and bronchopneumonia after transverse colostomy and the other, who had massive rectal bleeding 2 weeks previous to admission, of myocardial infarction. Follow-ups for periods up to 10 years were made on 24 of the surviving patients. No further symptoms attributable to diverticulitis were observed in 23. One patient developed intestinal obstruction several years after operation; he recovered with conservative treatment.

The pathological findings were typical of those found in diverticulitis. Microscopic findings disclosed that 18 (56%) of the patients had ulceration, either of the colonic wall or within diverticula. These ulcerated zones proved to be typical inflammatory ulcers characterized by absence of surface epithelium, destruction of the submucosa, vascular engorgement, and evidence of acute inflammation. The ulceration was considered sufficient to produce bleeding. One of the specimens contained an ulcerated inverted diverticulum. The possibility of this rare condition is emphasized because of the danger of mistaking such a lesion for a polyp. It is difficult to differentiate bleeding due to diverticulitis from that due to neoplasm, and both diseases may occur simultaneously.

Surgical Treatment of Atrial and Ventricular Septal Defects: Results in 63 Patients. D. A. Cooley, D. G. McNamara and J. R. Latson. South. M. J. 50:1044-1047 (Aug.) 1957 [Birmingham, Ala.].

Forty-nine of 63 cases of isolated congenital septal defects involved the interventricular septum and 14 the interatrial septum. A mechanical pump-oxygenator was used for temporary cardiopulmonary by-pass in all 63 patients, none of whom was refused operation because of poor condition, the operation being undertaken in many as a last resort. In patients selected for operation a large septal defect was suggested by cardiac dilatation, pulmonary hypertension, or frank congestive heart failure. A modified DeWall-Lillehei bubble diffusion system oxygenator was used, all portions of which were discarded at the completion of the operation. Where a bloodless field was deemed desirable in cases of ventricular septal defect, cardiac arrest was induced with use of a dilute potassium citrate solution. A mortality of 16.3% (49 patients with 8 deaths) occurred in the surgical correction of ventricular septal defect. Most of the operations were performed on children, 18 of whom were less than 2 years old and in poor condition for withstanding the trauma of surgery. More than half of the patients in this group had associated cardiac anomalies which further increased cardiac disability adding to the technical problems of the operation. Eighteen patients with moderate to severe pulmonary hypertension obtained the greatest improvement postoperatively, with up to 50% decrease in the pressure. A mortality of 14.2% (14 patients with 2 deaths) ensued in the repair of atrial septal defects, all patients save one being female and ranging in age from 5 to 50 years. One of the fatalities occurred 3 days after the operation, in a 50-year-old women who had been bedridden for years with intractable congestive failure, the other fatality being due to massive air embolism following potassium-induced arrest. A careful and complete closure was obtained in the other 12 patients, who tolerated the operation extremely well, a decrease in pulmonary vascularity, reduction in cardiac size, and relief of symptoms following repair of the defect. Cardiopulmonary by-pass has been found to be efficacious in 36 other patients variously affected with infundibular pulmonic stenosis, aorticopulmonary septal defect, atrioventricularis communis, subaortic stenosis, single ventricle, and some cases of tetralogy of Fallot.

Long Term Survival Following Right Hepatic Lobectomy. A. Brunschwig. Am. J. Surg. 94:2-8 (July) 1957 [New York].

The clinical records of 4 patients who underwent total (3) and subtotal (1) right lobectomy are presented. The lesions were massive angiomas in 2 patients, who are living and well 6 years and 5¼years, respectively, after the operation. The lesions in 2 patients were malignant hepatomas. Subtotal right hepatic lobectomy was performed in one of these patients when she was 14 years old. Five years later she married and is living and well. Partial right hepatic lobectomy was performed in the other patient; 2 years later the right hepatic lobectomy was completed because of metastasis from the primary lesion; the patient leads a normal existence 2¼ years after the second operation.

The human organism is quite capable of surviving in normal condition with only the left lobe of the liver in situ. The right hepatic lobectomy has a very large factor of safety. The showing of no physiological disturbances in the 4 patients is ample evidence of adequate function of the left lobe in maintaining general physiological requirements. Two general principles of excision are described: the immediate transection of the lobe through its base, and the so-called controlled method. Both procedures can be performed satisfactorily.

Operative Cholangiography in Surgery of the Biliary Tract. M. Corff. Am. J. Surg. 94:9-18 (July) 1957 [New York].

A series of 100 consecutive patients treated during 1955 were reviewed, and exploration of the common duct and operative as well as postoperative cholangiograms were performed. There was no mortality in this series. Little or no morbidity was due to the procedure of operative cholangiography. Dilatation of the common duct was the indication in 50% of the patients and jaundice in 28%. In 47%

of the patients stones were found in the common duct; 27% of these patients had stones without jaundice. Precholedochostomy films appeared not to be accurate enough to be of real value. The post-choledochostomy cholangiogram has proved to be more valuable: it demonstrated stones left in the common duct after exploration in 5% of the patients. The common duct was reopened and the stones removed before the incision was closed. One or more postoperative cholangiograms were taken in all of the 100 patients. Under ideal circumstances the incidence of retained stones might have been reduced to 2%. Operative cholangiography, especially the postcholedochostomy type, should be used in every case in which exploration of the common duct is performed. But it cannot and should not replace surgical skill and experience in the treatment of stones in the common duct.

Observations on a Group of 105 Patients with Chronic Subdural Hematoma. D. Cuccia. Riforma med. 71:726-729 (June 29) 1957 (In Italian) [Naples].

One hundred five patients, 89 male and 16 female, with chronic subdural hematoma, spontaneous in 24 and post-traumatic in 81, are reported. The majority of the patients were from 40 to 60 years old. Patients with the post-traumatic form were able to return to their usual activities soon after the trauma had occurred; some of these patients noticed mild headache, asthemia, and loss of weight; these symptoms eventually became worse. Marked symptoms appeared suddenly in 12 patients. Diagnosis was difficult in the absence of history of trauma. The symptoms were not consistent and in some cases disappeared for brief periods of time. Bradycardia was not too frequent. Psychic symptoms were present in most patients. Roentgenologic examination revealed a fracture caused possibly by a latent trauma in 11 patients. For the diagnosis the author relied mainly on angiography for patients with post-traumatic hematoma and on ventriculography for patients with spontaneous hematoma. Very good results were obtained with trephine operation performed according to the usual technique, with the exception that a cannula of small caliber was used for drainage. Three patients, 1 with spontaneous hematoma, died. The postoperative course was more complicated in patients with spontaneous hematoma.

Cardiac Arrest One Hour Following Pneumonectomy. N. C. Hamel and L. A. Brewer. A. M. A. Arch. Surg. 75:277-281 (Aug.) 1957 [Chicago].

A successful resuscitation of a patient with cardiac arrest due to massive intrapleural hemorrhage is reported, in whom the right main pulmonary artery was religated and the heart revived one hour after pneumonectomy. The successful outcome of this case was due to several factors: the prompt detection of the cessation of vital signs by the special nurse; the immediate decision to reopen the chest; the readiness of the operating room for a thoracotomy and the immediate availability of the anesthetist; the location of the postoperative room next to the operating room; and the availability of a large quantity of type O blood and the presence of a cannula in the ankle vein, which made rapid restoration of the blood volume possible. The best medium to provide oxygen to the sensitive nervous system is whole blood, with the oxygen-carrying capacity of the hemoglobin. No neurological sequelae were observed. It must be, therefore, presumed that some cerebral circulation was maintained from the moment the diagnosis of cardiac standstill was made until the heart action was resumed. It was important that the patient had no prolonged periods of hypoxia during the operation or in the immediate postoperative period, so that the brain was well oxygenated up to the point of the cardiac standstill.

Primary Cardiac Tumors: Surgical Treatment. R. Robertson. Am. J. Surg. 94:183-193 (Aug.) 1957 [New York].

The author operated on 5 patients with primary tumor of the heart. Two patients are apparently cured, 1 was improved for several years, and 2 died. The first patient, 2 years old, was given a diagnosis preoperatively of mediastinal dermoid cyst. At operation a teratoma of the pericardium was found. The right coronary artery was embedded in the mass. The tumor appeared to obtain its blood supply from 2 large vessels springing from the right coronary artery at its origin. The tumor was removed. There was considerable bleeding from the branch of the right coronary artery entering the tumor. Cardiac arrest occurred 3 times. Heart beat could not be restored the third time. It was thought that the right coronary artery may have been occluded by the ligature. The second patient, a 34-year-old woman, was given a preoperative diagnosis of pericarditis with effusion. At operation several tumor nodules were found, scattered over the visceral and parietal pericardium. Pathologists diagnosed the tumor as cylindroma, metastatic adenocarcinoma, and carcinoma. The patient remained well for 5 years and died of local recurrence of the tumor. The third patient, a 47-year-old woman, died a month after the operation. At operation there was found a white, fleshy mass of tissue, which surrounded and infiltrated the great vessels within the pericardium. It was not possible to remove the tumor. At autopsy the heart was found to be grossly enlarged. There was widespread involvement of the pericardium by a malignant process. The tumor infiltrated the wall of the right atrium, protruding into the atrial cavity. It was not possible to find the primary site of the tumor. The lesion was thought to be a mesothelyosarcoma of pericardial origin.

The 4th patient, aged 3 years, had a lymphangioma of the pericardium. A hard mass the size of a small orange was found attached to the pericardial sac, the right atrium, right ventricle, superior vena cava, and aorta; it was removed with difficulty. During the dissection the right coronary artery was encountered, and a small artery appeared to branch from it into the cyst. This was ligated and divided and the right coronary artery protected. The patient made a good recovery. Previous unfortunate experiences, in which uncontrolled bleeding from the aorta was encountered, led to increased care being taken in dissection in this area and contributed to the favorable result. The 5th patient, a 38-year-old woman, was operated on for mitral commissurotomy, but her mitral valves were found to be normal. A round tumor mass was palpable in the left atrium. Since preparations had not been made for dealing with this condition, the tumor, diagnosed as myxoma of the left atrium, was removed at a second operation with the patient under hypothermia at 30 C. The patient had a stormy but favorable recovery. Hypothermia or use of the heart-lung apparatus is recommended for removing a myxoma of the atrium. All patients who clinically appear to have mitral or tricuspid stenosis must be considered as possible atrial tumor suspects, particularly in the absence of rheumatic fever or when the tricuspid is involved singly.

The Bypass Graft: Its Use in Arterial Occlusive Disease. J. H. Payne, N. E. Rudy and T. Winsor. Am. J. Surg. 94:171-182 (Aug.) 1957 [New York].

The authors used 23 bypass grafts in 15 patients with arteriosclerotic insufficiency of the peripheral blood vessels. This condition is often due to localized obstruction with a patent arterial system above and below the obstruction. Three patients were Negroes. The ages varied from 39 to 76. The patients underwent clinical and vasographic examination. Vasograms proved of value in the selection of patients for the bypass graft and for lumbar sympathectomy. The obstructions which were bypassed were located in the following arteries: the superficial femoral in 13 cases, the external iliac in 12, the common iliac in 11, the internal iliac in 10, the common femoral in 8, the aorta in 3, the popliteal in 2, and in the arteries distal to the popliteal in 2. Lyophilized arterial homografts were used for the bypass. The initial results were excellent in 17 patients, improved in 2, and poor in 4. No patient's blood flow was impaired by the surgical procedures; however, an amputation was unavoidable. Two of the patients included in the poor-results group required revision of the grafts during the immediate postoperative period and were converted to the excellent-results group. Vasographic examination of 2 of the 4 grafts with poor results suggested that arterial disease was present distal to the popliteal bifurcation before surgery. The 4th patient died on the 3rd postoperative day from renal failure and toxemia due to a gangrenous leg. The final outcome with these patients is not known.

Incidence of Megaloblastic Anemia After Subtotal Gastrectomy. L. D. MacLean. New England J. Med. 257:262-265 (Aug. 8) 1957 [Boston].

Assays for the intrinsic factor in the gastrointestinal tract were made with the aid of the absorption of cobalt-60-labeled vitamin B_{12} in a group of 13 patients who had undergone various types of subtotal gastrectomy at least 3 months previously. A clinically significant lack of intrinsic factor, comparable to that seen after total gastrectomy or in patients with pernicious anemia, was observed in 1 of the 13 patients. Microscopic examination of the resected portion of the patient's stomach revealed chronic cellular infiltration, intestinalization of the mucosa, absence of parietal and chief cells, and atrophy of all layers. The patient had a normal hemoglobin and a negative bone-marrow biopsy at the time of this investigation. The same microscopic changes in the resected stomach as had been observed in this patient with abnormal absorption of cobalt-60-labeled vitamin B_{12} were found in 9 patients with megaloblastic anemia after subtotal gastrectomy; these patients were detected after screening of 1,500 patients who had undergone this operation. It is suggested that patients who are capable of producing adequate quantities of intrinsic factor when endowed with an intact stomach may be rendered deficient in this capacity if the stomach is subtotally resected.

Megaloblastic anemia indistinguishable from pernicious anemia is a late but inevitable sequela of total gastrectomy and probably of proximal subtotal gastrectomy with esophagoenterostomy. The occurrence of megaloblastic anemia after subtotal gastrectomy can apparently be predicted with the aid of microscopic examination of the resected stomach.

Soft Tissue Sarcoma of the Shoulder, with Thirty-six Years' Survival. H. Charache and J. J. Gainey. A. M. A. Arch. Surg. 75:263-266 (Aug.) 1957 [Chicago].

A woman with a large round-cell sarcoma of the shoulder is reported who is living and well 36 years after onset of symptoms. She had had 4 local excisions and 4 recurrences. She also received 4 courses of treatment with deep x-ray therapy and 2 implantations of radium. In these 10 years she had no metastases, although the tumor was highly malignant. She developed erysipelas severe enough to require hospitalization. Ten years later the patient's arm became ulcerated and necrotic and began to slough. An interscapular thoracic amputation without disarticulation was performed. The patient received 3 more courses of deep x-ray therapy. She is now living and well, with her only complaint intermittent dyspnea on exertion. This patient apparently has an abundance of an anticarcinogenic factor, also called cancer resistance or growth control.

Annular Pancreas. T. J. Whelan Jr. and G. B. Hamilton. Ann. Surg. 146:252-262 (Aug.) 1957 [Philadelphia].

The observation of 3 patients with annular pancreas induced the authors to review the literature on the theories of development of annular pancreas, its complications, and its clinical picture. The reports on the 93 patients operated on for annular pancreas through 1955 are analyzed as regards the incidence of other anomalies, incidence of associated peptic ulcer, or pancreatitis, and the results obtained with various methods of treatment. Eleven different surgical procedures and the results obtained with them are listed.

An attempt has been made to standardize the surgical therapy of this condition. Duodenojejunostomy is recommended as the treatment of choice when duodenal obstruction only is present. Gastrectomy without division of the annulus with gastrojejunostomy is recommended in those patients having associated peptic ulcer. In patients in whom the annulus is the isolated site of pancreatitis, resection of the ring is suggested. It is emphasized that when the entire pancreas, including the annulus, is the site of chronic relapsing pancreatitis the treatment cannot be standardized. This latter situation represents the biggest problem in the surgical therapy of annular pancreas. The authors believe that the high incidence of duodenal stenosis and atresia in children with annular pancreas and of duodenal stenosis in adults is more than a mere coincidence. They point out that in the 6-week to 7-week embryo, the duodenum with the ventral anlage undergoes rotation, while at the same time the lumen of the gut is evolving from its solid state. Since atresia or stenosis is believed to be an incomplete evolution from the solid state, a temporary arrest in development at this stage might explain the frequent association of the 2 defects.

Fatal Postoperative Pancreatitis. D. O. Ferris, T. E. Lynn, J. C. Cain and A. H. Baggenstoss. Ann. Surg. 146:263-273 (Aug.) 1957 [Philadelphia].

The authors reviewed the records of 9 patients in whom postoperative pancreatitis terminated in death. They were observed at the Mayo Clinic from 1940 to 1955. In 1 patient the pancreatitis followed a pancreatic biopsy, in 3 it followed biliary tract operation, in 1 it followed a gastric operation, and in 4 it followed operative procedures distant from the pancreas. The clinical manifestations of postoperative pancreatitis generally appear within the first few days after the operation. In this series the complication appeared on the day of operation in 5 and by the third postoperative day in all of the cases. The patients were beyond the age of 40 years.

A common etiological factor is lacking. Some form of obstruction to pancreatic drainage, trauma to the gland, and interference with pancreatic blood supply are frequently considered. The possibility of humoral-borne proteolytic enzymes or allergic phenomena in the pathogenesis of pancreatitis bears further investigation. The prominent clinical features include abdominal pain, shock, vomiting, fever, abdominal distention, oliguria, azotemia, hypochloremia, acidosis, hyperamylasemia, and hypocalcemia. Prompt recognition and treatment are essential if one is to reduce the mortality from this complication. Once pancreatitis is suspected, the management includes continuous nasogastric suction, cautious control of fluid and electrolyte balance, broad-spectrum antibiotics, a vagal blocking agent, and the avoidance of morphine and allied agents. Occasionally, toxemic mental symptoms will necessitate the use of a sedative. Autopsy was performed in 8 of the 9 fatal cases reviewed. Pancreatic necrosis was found in 5 cases and hemorrhagic necrosis in 3. In 7 cases there was necrosis of the renal tubular epithelium, which was most severe in the lower portion of the nephron. The presence of trypsin may be a factor in the association of pancreatitis and lower nephron nephrosis, but certainly shock, when it is present, is also of great importance in the pathogenesis of the renal lesion.

Spontaneous Rupture of the Hepatic Duct. R. E. Snyder. Ann. Surg. 146:246-251 (Aug.) 1957 [Philadelphia].

Review of literature revealed that spontaneous rupture of the hepatic duct is a rare condition and that only 4 such cases have been recorded. The author reports a 51-year-old woman in whom a diagnosis of acute cholecystitis was entertained and perforation of the gallbladder with the bile peritonitis was to be ruled out. Immediate operation was advised because of the evidence of early spreading peritonitis. The parietal peritoneum was of a golden yellow color, and following its incision a large quantity of bile-colored fluid was found free in the right upper abdominal cavity. The bile was aspirated, and on careful search its source was found to be a small pinpoint opening high under the quadrate lobe of the liver near the porta and on the anterior surface of the portal triad. The visible portion of the gallbladder wall was intact. The common duct was incised and explored for the presence of stones as were the hepatic duct and the right and left tributaries of the hepatic duct.

The gallbladder was removed, and as the cystic duct was mobilized from its intimate and parallel relationship to the hepatic and common ducts, the exact anatomic location of the perforation was proved. It lay in the anterior wall of the hepatic duct, approximately 2 to 3 mm. above the junction of the cystic duct with the common duct, and it measured approximately 1 to 2 mm. in diameter. The patient's postoperative course was stormy. Her convalescence was complicated by ascending cholangitis characterized by a moderate degree of jaundice. Four weeks after the operation all drainage from the T-tube and incision had ceased, and the patient was discharged 5 weeks following the operation. One week later the T-tube was removed, and she has remained well. The author reviews the other 4 cases of spontaneous perforation of the hepatic duct that have appeared in the literature.

Diverticulitis of the Colon: Radical Versus Conservative Treatment. W. W. Greene. Am. J. Surg. 94:282-291 (Aug.) 1957 [New York].

Diverticulitis of the colon is a progressive disease found mainly in the older age group. A group of 353 patients with diverticulitis of the colon was observed in the San Francisco Hospital during the last 10 years. The admission diagnosis of the patients in this series indicated that diverticulitis can simulate a variety of conditions. Frequently it is difficult to differentiate between the symptoms of diverticulitis and carcinoma of the colon. There were 15 acute perforations with peritonitis. Sixty-two patients were admitted because of gross bleeding. Those with the most bleeding seemed to have the most advanced diverticulitis. Hemorrhage from the colon may be a sign of impending perforation. Two-thirds of these patients have had recurrences, with over half of them having complications; conservative treatment seemed adequate for only one-third. Each case should be followed as an individual problem. The author recommends surgical therapy instead of conservative treatment for patients showing signs of recurrent diverticulitis of the colon as well as for its complications. With the improved surgical techniques, the mortality rate in most reported series of resections was under 3%.

Resection is suggested for patients with the following conditions: complications of diverticulitis (obstructions, perforation, abscess, fistulas, etc.), recurrent attacks of diverticulitis, persistent deformity shown by barium enema, recurrent massive bleeding from the colon if the diverticulitis is localized, and persistent urinary tract symptoms associated with diverticulitis. A one-stage resection in an acute case is not advisable. The one-stage procedure may be attempted when the intestine can be adequately prepared and when there is no evidence of acute inflammatory process, obstruction, or sinus or fistula formation. There were 27 deaths attributable to diverticulitis of the colon and its complications in this series. Ten deaths were due to perforations with peritonitis among the nonoperative group. The over-all mortality rate was 15.1%. In the past, diverticulitis of the colon has been treated conservatively at the San Francisco Hospital. Surgery was performed only for the complications and accounts for the varied procedures and the high mortality rate found in this series.

Current Investigation in the Homograft Problem. J. A. Cannon, P. I. Terasaki and W. P. Longmire. Am. J. Surg. 94:303-312 (Aug.) 1957 [New York].

The authors succeeded in obtaining a permanent homograft survival of skin in both members of one pair of day-old chicks. Later they homografted 50 chicks in a 2-hour period. They noticed that the more closely related the 2 breeds of chicks used, the higher the incidence of permanent homograft takes. Homografting between day-old chicks of any 2 common breeds rarely resulted in a permanent homograft take of less than 5%. Homograft survival occurred only in chicks grafted before they reached 7 days of age. Chick pairs grafted when more than 7 days old, though showing usually a 100% take of autografts, never showed homograft survival longer than 2 to 3 weeks. If skin from chicks of increasing age was grafted onto day-old chicks, a definite though decreasing incidence of long-term homograft survival was obtained until the skin used was 14 or more days older, at which point the grafts were uniformly sloughed. The authors applied the theory of immunological tolerance to homografts which is as follows: If living cellular material is injected from a donor into a host in an embryonic or, in some cases, infant stage, the homograft response is in some way altered so that a later challenge of the host with a skin graft from the donor of the injected cells is tolerated—sometimes permanently and at least usually for a much longer time than would occur in the absence of pretreatment. The authors developed a technique which allows the cross injection of blood between large numbers of chick embryos. The highest incidence of long-term graft survival occurred in chicks treated at 12 to 18 days of incubation; the lowest incidence was in newly hatched chicks. None of the preceding work would permit clinical application, although certain aspects of these experiments are provocative of limited clinical considerations. At present, human kidney homografts have been tolerated by the host as long as 5½ months. Compared to the results presently obtained in many palliative cancer operations, even 3 months of efficient palliation afforded by a renal homograft to a patient dying of uremia may be worthy of consideration. If by some means an average palliation of one year could be offered such patients, it would seem proper to offer the procedure.

PEDIATRICS

Two Cases of Listerial Meningitis in Infants. P. N. Edmunds, D. N. Nicholson and D. M. Douglas. Brit. M. J. 2:188-191 (July 27) 1957 [London].

No published case of human listeriosis has occurred in Britain since 1941. In 1956 near Edinburgh 2 infants with listerial meningitis were admitted to a hospital; one was 3 months old, the other 10 days. The first baby was never critically ill during his stay in hospital. Penicillin had been given for 6 days, sulphadiazine for 17 days, and chloramphenicol for 10 days. He was discharged on the 27th hospital day. The second baby came from an unhygienic home. Thirty-six hours after admission he had a generalized convulsion lasting several minutes. He was first treated with streptomycin, then with chloramphenicol. He was discharged on the 35th day. Typing serums were prepared for the identification of the 4 main serotypes and 2 subtypes of Listeria. The strain in the first baby was found to be type 4b, and the one in the second baby was type 2. Type 4 is widespread among different animal species, but the incidence of type 4b, as distinct from 4a, does not seem to have been investigated so far. There were no animals in contact with the first baby, except that a cat had perhaps licked the baby's feeding bottle. No records exist of cats being infected with Listeria monocytogenes. There was no contact between the second baby and any livestock, although there were a dog, mice, and beetles in the house. Apparently no type 2 strain (second baby) has yet been isolated from animals. The possibility of human-to-human infection is suggested by some clinicians. The authors think that there was congenital infection in the second baby because of the short period elapsing between birth and the onset of symptoms.

Investigation of Amino Aciduria in Erythroblastosis Foetalis and Its Possible Relationship to Kernicterus. P. J. Nestel and L. Nestel. M. J. Australia 1:909-911 (June 29) 1957 [Sydney, Australia].

Kernicterus or encephalomyelopathy with jaundice is a postnatal condition in which certain characteristic neurological signs are associated with a deposition of bilirubin in various parts of the brain. This had led to the assumption that the bilirubin was responsible for the cerebral lesions. Evidence is accumulating which suggests that bilirubin per se will stain brain tissue only after the latter has been injured by other factors. This pigmentation of the brain may then be merely fortuitous, and another toxin present in encephalomyelopathy with icterus may be responsible for the underlying brain damage. In recent years the association of liver failure with neuropsychiatric syndromes has been stressed. Many cerebral functions are interfered with, and some of the signs bear a close resemblance to those of encephalomyelopathy with icterus. Ammonia and amino acids have been shown to be present in the blood, the cerebrospinal fluid, and the urine in high concentration in serious liver damage of varied etiology. The amino aciduria may be regarded as of the "overflow" variety.

The authors investigated with the aid of paper chromatography the amino acid concentrations of 8 infants with severe erythroblastosis fetalis (hemolytic disease of the newborn). They found that amino acids were present in considerably increased concentration. Altogether 21 different amino acids were identified, many of which are not found in the urine of newborn infants under normal conditions. It is possible therefore that encephalomyelopathy with icterus is an irreversible lesion produced by one or several nitrogenous substances present in toxic amounts during the stage of liver insufficiency, the areas of necrosis being subsequently pigmented by bilirubin. Such a hypothesis would also be compatible with the prophylactic effect of exchange transfusion.

Chloramphenicol-Tetracycline Treatment of Salmonellosis in Children: Strip-Gradient and Replica Strip-Gradient Techniques as Guides to Therapy. M. M. Streitfeld, M. S. Saslaw and R. B. Lawson. A. M. A. J. Dis. Child. 94:155-168 (Aug.) 1957 [Chicago].

Although chloramphenicol is the drug of choice in typhoid fever and other Salmonella infections, it is often inadequate in that relapses are common, the organisms persist in bile or stools for variable periods of time, carrier states may not be permanently eradicated, and intestinal hemorrhage and perforation may still occur. The authors report investigations carried out to find an additional antibiotic against Salmonella infections. Two of the authors (Streitfeld and Saslaw) had earlier described a strip-gradient technique for testing pairs of antibiotics in various concentration ratios. The authors describe bacteriological and clinical studies performed on patients with salmonellosis in a hospital in Miami, Fla. Strip-gradient studies performed on 45 species and strains of Salmonella demonstrated the in vitro efficacy of combined use of chloramphenicol and tetracycline in inhibiting growth of these organisms. The 45 strains consisted of 29 isolates from stool or blood cultures from patients ill with Salmonella infections (including 5 patients with typhoid fever), 1 isolate from a rat colony epidemic of pulmonary and gastrointestinal salmonellosis, and 15 stock strains of different groups and types of Salmonella.

Replica strip-gradient investigations indicated that the effects of the combined antibiotics were bacteriostatic rather than bactericidal. These in vitro results were used as guides to therapy in 11 human patients (2 with typhoid fever and 9 with other types of salmonellosis), who had failed to respond adequately to prior medication with single

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BOOK REVIEWS

Blood Pressure Sounds and Their Meanings. By John Erskine Malcolm, B.Sc., M.B., Ch.B. Cloth. $2.50. Pp. 93, with 45 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1957.

The object of the research described in this monograph is the establishment of a physical explanation for the Korotkoff sounds. Some, but not all, of the previous work on this aspect of physiology is here reviewed. In this study, the Korotkoff sounds are related to vibrations of the brachial arterial wall as recorded under a sphygmomanometer cuff while the cuff pressure is slowly reduced toward zero from a level well above the systolic pressure. These vibrations are presumed to represent the brachial arterial pulse wave shape and amplitude. Classical work devoted to the complexities of pulse wave transmission through the systemic arterial tree forms the background of this report. This includes the concepts of standing and reflected waves and the factors that determine them. The relationship of arterial blood flow to blood pressure is also shown to be more complex than is perhaps commonly realized. The Korotkoff sounds are then explained on the basis of systemic arterial resonance. It is stated that resonance occurs in arteries, due to and maintained by impulses from the heart and reflected waves from the periphery, with the result that systems of stationary waves develop in arteries with fixed nodes and antinodes at certain points in the arterial system; and, further, that experimental evidence will be shown to afford proof of the presence of stationary waves in the brachial artery in man, with the occurrence of changes of wave length and alteration of the system of stationary waves, as a result of cuff pressure. Anatomic manifestations of systemic arterial resonance are presented, and these are of great interest. The concepts of "cavitation" and "water hammer" are also introduced; these appear to play a role in the production of the sounds.

The approach is thus largely general and indirect. The Korotkoff sounds are not related to directly recorded brachial arterial pressure pulses, nor does the author comment on factors responsible for the lack of a precise or predictable relationship between the Korotkoff sounds and directly recorded brachial arterial blood pressure. There is no detailed discussion of the variations in these sounds as related to pathological states of the arterial wall, or of the circulation as a whole, as for example in aortic insufficiently. These aspects are perhaps beyond the scope of the book, but explanations for such observations as the occasional absence of the third (diastolic) sound are provided. Much of the presentation is controversial, and many views expressed will be sharply criticized by other workers in the field. This provocative work is probably beyond the scope of most clinicians. It is of interest as a contribution toward better understanding of the Korotkoff sounds, which are so widely and confidently used as clinical data. The style of writing and the format of the book are pleasing.

Peripheral Circulation in Health and Disease. By Walter Redisch, M.D., F.A.C.P., Associate Professor of Clinical Medicine, New York University College of Medicine, New York, and Francisco F. Tangco, M.D., B.S., Assistant Professor of Medicine, University of Philippines Medical School, Manila. With special section by R. L. deC. H. Saunders, M.D., F.R.S.E., Professor and Head of Department of Anatomy, Dalhousie University Medical School, Halifax, Nova Scotia, Canada, and associates. Cloth. $7.75. Pp. 154, with 25 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; 99 Great Russell St., London, W. C. 1, England, 1957.

This challenging and stimulating monograph on peripheral circulation is addressed to a variety of readers. The first four parts of the volume deal with basic aspects of peripheral blood flow, pathological alterations in peripheral blood flow, physiological responses to disturbances in blood flow, and therapy. This highly systematized and compressed account of knowledge is adequately supported by references to the literature in which medical students or graduate students interested in vascular disease may find a concise summary of present knowledge. The authors supply little if any information to the practitioner of medicine as to procedure except through references, giving a rather skeletonized description of diagnosis and management. Thus they mention paravertebral blocks or arteriography as something highly technical, to be read about in some other source, whereas they supply beautiful photomicrographs taken by electron-microscopy.

The main interest of the authors lies in the responses of blood vessels to varied stimuli, including drugs. Their only reference to the treatment of congenital vascular anomalies is an article by Dean D. Lewis, published in *Lancet* in 1930. Through the entire monograph, there runs not only sane conservatism but a "horror chirurgiae" hardly justifiable in the light of recent advances in vascular surgery.

These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

The final chapter, written by Professor Saunders, is concerned with the radiographic visualization of muscle circulation by microarteriographs, a technique fruitful in other regions of the body but not previously applied to the circulation of muscles. The author here demonstrates conclusively what had been postulated by Barcroft on the basis of physiological observation; that an elaborate mesh of arteriovenous shunts, preferential channels, and bypasses exists in skeletal muscle. This explains many discrepancies between the measurements of blood flow and the clinical state of the patient. As the author says, "The anatomy of the peripheral circulation of man has not been greatly extended since the time of William Harvey, nor has sufficient attention been paid to vascular areas intermediate between the grosser and the microscopic vessels." This chapter should be read by everyone who has any interest in circulation, whether this interest be in shock, burns, or hypertension.

Systemic Arterial Embolism: Pathogenesis and Prophylaxis. By John Martin Askey, M.D., Associate Clinical Professor of Medicine, University of Southern California School of Medicine, Los Angeles. Modern Medical Monographs 14. Cloth. $5.75. Pp. 157, with 22 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; 99 Great Russell St., London, W. C. 1, England, 1957.

This monograph reviews in an orderly fashion the problem of embolism of peripheral arteries. The basis for the review is an extensive bibliography citing almost 300 references. The statistics bearing directly on the problem of embolism are all derived from these articles. The book also deals with the various forms of heart disease which are described as being the major causes of arterial embolism in the chapter Differential Diagnosis of Heart Disease. The fact that the condition of a high proportion of patients with rheumatic heart disease goes without accurate diagnosis during life is pointed out. Major arterial embolism may be the first sign of mitral stenosis, and careful search in such patients should disclose the underlying cause of the arterial accident. Parts of this chapter appear to be somewhat beside the point. Other sections dealing with rheumatic fever and its relation to prophylactic anticoagulant therapy are excellent. A large proportion of the volume is devoted to anticoagulants. The practical use of bishydroxycoumarin as a prothrombin depressor is thoroughly presented. The place of heparin in acute embolism is mentioned but not described. Each of the nine chapters is summarized in a most helpful fashion.

The relationship between peripheral arterial embolism and current operations on the mitral valve for stenosis is mentioned repeatedly in regard to indications for operation, in comparison to anticoagulant therapy, and the results of mitral valve operations on the incidence of embolism. The surgical treatment of the peripheral arterial embolus is only briefly mentioned. The reader is left with the impression that the author favors embolectomy in most circumstances over so-called conservative nonsurgical treatment. The monograph is well written and provides information on all aspects of its subject. Its value should be greatest to the general practitioner in giving a firm understanding of arterial embolism and to the internist in providing source material on this subject. The accuracy and completeness of the index is deficient, making it somewhat difficult to locate discussions of single aspects of the problem.

The Clinical Aspects of Arteriosclerosis. By Seymour H. Rinzler, M.D., F.A.C.P., Associate Physician, Beth Israel Hospital, New York. Cloth. $8.75. Pp. 339, with 57 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1957.

This book brings together much of the current knowledge of the clinical problems of arteriosclerosis. It deals in detail with the diagnosis and treatment of arteriosclerosis of the coronary, cerebral, and peripheral arteries and of the aorta. The fact that the section on coronary artery disease occupies about one-half the text reflects not only the importance of this aspect of arteriosclerosis but the relative lack of information on arteriosclerosis in other vascular beds. Even though the author states that arteriosclerosis of the cerebral arteries is the second commonest cause of death due to vascular disease, the section dealing with cerebral arteriosclerosis is comparatively short. Nevertheless, the various clinical syndromes due to occlusions of particular cerebral arteries are well defined. Treatment of these is not discussed in detail. This seems unfortunate, since the socially and physically crippling effects of a stroke can be major problems to the patient, his family, and his physician, all of whom may feel baffled and helpless. In a sense, it is better at this time for a patient to suffer the complications of coronary than of cerebral arteriosclerosis, since the treatment of myocardial infarction is better organized.

The opening chapter surveys incidence, pathology, pathogenesis, the possible role of lipid abnormalities, the relationship of diet to arteriosclerosis, and the accelerating effects of hypertension and diabetes; it also attempts to give some of the experimental background. Because of its scope, it fails to give a critical appraisal of current views. The present intense interest of physicians in the relationship of diet to arteriosclerosis will not be satisfied by the rather indecisive discussion, which fails to point up many of the fallacies inherent in some of the recent epidemiologic studies. Criticism aside, this is a timely, valuable book on an important subject. It should interest and be of help to physicians faced with the diagnostic and therapeutic problems of arteriosclerosis. Should it go into a second edition, the defects can be easily remedied. The publisher is to be congratulated on the make-up of this volume.

Chronic Illness in the United States. Volume I: Prevention of Chronic Illness. By Commission on Chronic Illness. Cloth. $6. Pp. 338. Published for Commonwealth Fund by Harvard University Press, Cambridge 38, Mass.; Oxford University Press, Amen House, Warwick Sq., London, E. C. 4, England, 1957.

The control of chronic illness is one of the major problems facing American medicine. Long-term disorders have risen sharply in frequency as one after another of the various acute diseases, particularly those resulting from infections, nutritional deficiencies, and faulty sanitation, have receded. The Commission on Chronic Illness was founded in 1949 by the American Hospital Association, the American Medical Association, the American Public Health Association, and the American Public Welfare Association. In addition to these founder groups, many influential organizations and many individuals have supported this work. The results of seven years of intensive study are now being made available.

This first volume presents the conclusions of the Commission with emphasis on prevention. Part 1 outlines 21 conclusions and recommendations which the Commission adopted in February, 1956. Part 2 outlines the summaries on the preventive aspects of the most common long-term diseases. Most of the summaries have a satisfactory, but not complete, bibliography. This scholarly and carefully documented report should receive wide distribution and acceptance. It is a milestone in the search for more effective means for the control of chronic illness. The highlights of the various diseases are analyzed with particular focus on control, where possible, before serious impairment occurs. The recommendations, which include a reorientation of medical education with more attention being directed to positive health, should be carefully studied by medical faculties throughout the nation. There are five appendixes and an excellent index. This book is highly recommended.

Medical Radiation Biology. By Friedrich Ellinger, M.D., Chief Radiation Biologist and Head Pharmacology Division, Naval Medical Research Institute, Bethesda, Md. Cloth. $20. Pp. 945, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1957.

This book represents a digest, in the best sense of that word, of an immense body of published facts about the effects of radiations on the human and animal body. About 500 pages are devoted especially to the ionizing radiations, about 60 to ultraviolet radiation, and about 20 to visible and infrared radiation. Of special interest are the detailed, concrete summaries of effects of ionizing radiations on skin, gonads, and blood-forming organs; the discussion of the acute syndrome following whole-body radiation; the chapter on neoplasms and allied diseases; and the compact statements regarding the action of radioactive isotopes introduced into the body to irradiate tissues from within. A chapter on ionizing radiations as a health hazard calls attention to some neglected sources of danger and gives quantitative facts regarding the effects of cosmic rays at sea level and at high altitudes.

The distinctive feature of this book is not so much the gigantic bibliography as the care with which all the information has been assimilated into a readable textual continuum. Each reference is represented in the proper place by a coherent, brief statement of its content. There is no alphabetical subject-index, but the extensive table of contents makes it easy to locate any desired subject. The references to publications in German, French, and other foreign languages are unusually accurate. The book can be recommended both as interesting reading for physicians in general and as a key to existing literature for radiologists and biophysicists.

Clinical Orthopaedics. Number Nine. Anthony F. DePalma, editor-in-chief. With assistance of associate editors, Board of Advisory Editors and Board of Corresponding Editors. Cloth. $7.50. Pp. 353, with illustrations. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; 4865 Western Ave., Montreal 6, Canada; Pitman Medical Publishing Company, Ltd., 45 New Oxford St., London, W. C. 1, England, 1957.

This volume maintains the level of excellence of the previous volumes in this series. The first article, by LeRoy A. Abbott, is a dedication to Dr. John Albert Key. To those who knew Dr. Key this short summary of his life expresses very well the general qualities of his outstanding personality, and, as the author says, "His death left a great void in the lives of his host of friends and colleagues." The first section of the book is a symposium on the pathological physiology of metabolic bone disorders, and each of the 11 chapters is well written. As in the previous volumes, the photographs and charts are easily understood. The second section deals with general orthopedic problems and, as in previous volumes, the third part of the book is devoted to motorist injuries and motorist safety. These articles should be read not only by surgeons dealing with trauma but also by those associated with the design and manufacture of automobiles. The article on the role of safety belts should be carefully studied. This article questions the advisability of making safety belts standard equipment without more conclusive research studies.

QUERIES AND MINOR NOTES

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To the Editor:—*Kindly outline a screening procedure to be used on those patients exhibiting some of the features of adrenogenital or Cushing's syndrome where adrenal hyperfunction is suspected. Please list criteria which constitute sufficient evidence for further investigation and surgery if indicated.*

Stanley B. Covert, M.D., Kingfield, Maine.

Answer.—One of the most significant diagnostic aids in deciding whether a patient has adrenal hyperfunction with resulting Cushing's syndrome is to compare all previous photographs with current ones. The changes in fat distribution can usually be readily differentiated. Important clinical features of the obesity include fulness of the upper third of the body. The face is usually round or moon-shaped, and there is also a drooping of the corners of the mouth, giving the appearance of the so-called fish mouth. There is an increased deposit of fat over the cervical region, giving the buffalo-hump appearance, and the supraclavicular fossae also contain an excessive amount of fat. Usually there is a tendency toward girdle obesity, with some wasting of the lower extremities. The complexion is ruddy, and the degree of acne, virilism, and hirsutism is not as pronounced as it is in the adrenogenital syndrome. Striae may or may not be present. When present, they are purplish in color and are found in the axillas as well as the lateral lower quadrant of the abdomen. A patient with Cushing's syndrome complains of weakness.

In the patient with the adrenogenital syndrome, the musculature is very heavy and has a masculine appearance and distribution. There is no redistribution of fat. Hirsutism, acne, and virilism are more pronounced, and the voice is deeper. There is no complaint of any weakness. Simple laboratory procedures are helpful but are not diagnostic. The white blood cell count in Cushing's syndrome is normal, with the exception that there is an increase in the number of polymorphonuclear cells and the total eosinophil count is low. In the adrenogenital syndrome the white blood cell and differential counts as well as the eosinophil count are normal. In Cushing's syndrome there is usually some carbohydrate intolerance, as manifested by either frank diabetes or diabetic type of glucose-tolerance curve. Hypertension is common in patients with Cushing's syndrome. In the adrenogenital syndrome, hypertension and diabetes seldom exist.

Osteoporosis is a rather frequent finding in Cushing's syndrome, but it does not occur in the adrenogenital syndrome. The presence of osteoporosis is of diagnostic significance, particularly in a young person with normal blood calcium, phosphorus, and alkaline phosphatase. Pyelography is rarely of any assistance in the diagnosis of Cushing's syndrome, and it has no value in the adrenogenital syndrome. Perirenal or retrosacral air insufflation is of little help, even for lateralization of a tumor in Cushing's syndrome, and has no value where adrenal hyperfunction due to hyperplasia occurs.

The measurement of hydrocortisone and some of its metabolites in the blood and urine is helpful in distinguishing between the adrenogenital syndrome and Cushing's syndrome where the clinical features may overlap. The urinary 17-ketosteroids are always above normal in the adrenogenital syndrome, whereas in Cushing's syndrome they may be low, normal, or elevated. In Cushing's syndrome, the 17-ketosteroids are slightly elevated in adrenal hyperplasia; they are low where a tumor exists and are often high where there is carcinoma. The urinary 11-oxysteroids are low in the adrenogenital syndrome and are either normal or above normal in Cushing's syndrome.

The administration of corticotropin (ACTH) to patients with the adrenogenital syndrome results in an additional increase in the elevated urinary excretion of 17-ketosteroids, and the administration of cortisone, hydrocortisone, or fludrocortisone causes a decrease in the urinary secretion of 17-ketosteroids. This contrasts with Cushing's syndrome, in which there is no change in the secretion of 17-ketosteroids after such therapy. The plasma and urinary 17-hydroxycorticosteroids are often elevated in Cushing's syndrome and are below normal in the adrenogenital syndrome. After the administration of corticotropin there is usually a marked rise in both the plasma and the urinary values in Cushing's syndrome. The administration of corticotropin in the adrenogenital syndrome produces no appreciable rise in the urinary or plasma levels.

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To the Editor:—*A 55-year-old man states that for six months he has had a thick white coating on the posterior portion of his tongue. He scrapes off what he calls "granular material" with a spoon. Please make suggestions as to diagnosis and treatment.*

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Answer.—The coating or furring on the tongue is not a sign of any specific disease. It is often associated with several conditions. Infections of the mouth and respiratory tract, even when not accompanied by fever, may be responsible for furring; mouth breathing, tobacco smoke, and febrile conditions are also associated with furring, but not gastrointestinal disease unless there is an accompanying fever.

Answer.—The epithelium of the tongue is constantly renewed and the desquamated outer layers are removed by its normal activity and environment. During the night when the activity of the tongue is greatly decreased, there is a tendency for a coating to develop. This coating usually disappears in the morning with resumption of greater activity on the part of the tongue, such as eating and talking. On this basis any decrease in oral activity due, for example, to a painful oral lesion may produce a coated tongue. The same may happen when there is a decrease in the moisture of the mouth caused by mouth breathing, diminished flow of saliva, or dehydration.

Another cause of coating of the tongue is alteration of the oral bacterial flora by antibiotics. When patients are given antibiotic drugs, particularly penicillin or chlortetracycline, the susceptible organisms in the oral flora are greatly diminished in number, permitting the resistant organisms to flourish and to alter the normal environment of the tongue. This is also known to occur lower in the gastrointestinal tract.

A third type of coated tongue is produced by functional or organic disturbances of the digestive tract, which lead to reversed peristalsis and the deposition of small particles of partly digested food from regurgitated gastric contents. Such regurgitation can take place at any time but is particularly likely to occur during the night when the individual is in the prone position. This type of coated tongue is sometimes called "worried" tongue. It can be detected by swallowing at night a gelatin capsule filled with lycopodium seeds and looking the next morning under the microscope for the characteristic seeds in scrapings from the tongue.

The most effective treatment of coated tongue consists in correction of the underlying local or systemic condition. If this is not known, the tongue can be scraped, e. g., with a toothbrush. In addition, normal oral activity and hygiene should be promoted. In stubborn cases a 10% alcoholic solution of salicylic acid followed by 3% hydrogen peroxide may be tried.

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Answer.—If this is a true instance of cold hypersensitivity, antihistamines are expected to relieve, or at least modify, the symptoms. The doses of the antihistamines may need to be large, and their sedative effects may require neutralization with stimulants (Ritalin, Dexedrine, or ephedrine).

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The technique of dermabrasion is said to give beneficial results. However, in the few instances in which this has been done by this consultant, the results have been unsatisfactory. It is agreed that no further roentgen therapy should be given unless the lesion can be excised and primary suture carried out. In this event, as soon as early healing takes place, the areas may be given further roentgen therapy.

EFFECT ON FETUS OF MOTHER TAKING A DIURETIC

To THE EDITOR:—*A 48-hour-old infant was seen because of moderate elevation in the temperature and lethargy. Careful physical examination was entirely within limits of normal except for moderate signs of dehydration, consisting primarily of poor tissue turgor, dry mucous membranes, thick tenacious saliva, and somewhat depressed anterior fontanel. After two days of clysis the child seemed to be much improved, was afebrile, and was nursing well. It was discharged with its mother and has since done very well at home. The blood culture and the blood cell count were both normal. This infant's mother had been taking acetazolamide (Diamox), 0.25 Gm. a day for a period of about three weeks up to the date of her delivery. Could this medication cause dehydration in an apparently otherwise normal newborn infant?*

C. Herbert Crane, M.D., Sidney, N. Y.

ANSWER.—Acetazolamide is chemically similar to the sulfonamides, but it is a far more potent inhibitor of carbonic anhydrase. The inhibition of this enzyme in the kidney results in a greater loss of fluid and electrolytes in the urine than would otherwise occur, and this effect is conducive to acidosis and dehydration. Molecules of the size and chemical configuration of acetazolamide are known to be transferred across the placenta into the fetal circulation. It seems quite possible that this medicament, given as indicated, could produce dehydration in an otherwise healthy newborn infant by the following three mechanisms: 1. The fluids and electrolytes of the fetus are in equilibrium with those of the mother. The increased maternal loss of electrolytes and fluids produced by acetazolamide would probably cause some shift of these substances out of the fetus. 2. There is also the possibility of some effect of acetazolamide on renal function of the fetus in utero, causing a loss of sodium and other electrolytes into the amniotic fluid. 3. Subsequent to birth there would presumably be an effect of any acetazolamide remaining in the infant upon its renal function.

Several articles have appeared in which the administration of acetazolamide has been described as reducing the edema of pregnancy, but none has mentioned any effect on the fetus. The schedule and amount of the drug administered, as well as the diet and acid-base balance of the patient, are all factors that would influence the extent to which acetazolamide might influence hydration of the fetus at term.

BLOOD SUGAR TEST RESULTS AFTER BLOOD HAS BEEN STANDING

To THE EDITOR:—*Is the result of a blood glucose test changed if oxalated blood is left standing (or refrigerated) for any period of time before making the determination?*

S. Theodore Sussman, M.D., New Rochelle, N. Y.

ANSWER.—Glucose is subject to rapid destruction in blood after removal from the vein due to enzymatic action and is related to the temperature at which the blood is held. At 37 C the glucose in blood is virtually exhausted in six hours, and at room temperatures as much as 10 mg. per 100 ml. is lost per hour. Even in the icebox significant amounts disappear overnight. The enzymes chiefly responsible for glycolysis appear to be resident in the erythrocytes, since their removal almost completely inhibits the process. Protein-free filtrates of blood are entirely free of glycolytic enzymes and may be kept indefinitely without alteration of their glucose values. If blood cannot be analyzed immediately or after a short period of refrigeration, it can be preserved by the addition of sodium fluoride, which is both an antienzyme and an anticoagulant. Since, however, its anticoagulant action is neither permanent nor reliable, it is best to utilize the fluoride only for its antienzymatic action and to depend on potassium oxalate to prevent clotting. For this purpose 4 mg. per milliliter of blood of the following mixture is used: 10 parts of sodium fluoride, 3 parts of potassium oxalate, and 1 part of thymol. All parts are by weight. It must be remembered, however, that the antienzymatic action of sodium fluoride renders blood containing it unsuitable for the determination of urea by the urease method.

VIRGINAL BREAST HYPERTROPHY

To THE EDITOR:—*A 13-year-old girl, 5 ft. 4½ in. (164 cm.) tall and weighing 120 lb. (54.4 kg.), noted that her normally large breasts began to show marked reddish-pinkish, wide striae, which ran from the periphery toward the nipples radially, in large numbers, and on both breasts. This condition occurred prior to her first menstruation. What is the cause of this development? Could it have been prevented? What can be done at present? Will these striae disappear without leaving any kind of scars?*

Egon E. Lustig, M.D., New York.

ANSWER.—Rapidly enlarging breasts will show pinkish striae caused by the stretching of thin skin with relatively poor protein matrix. Such breast development in young women is an expression of exaggerated end-organ responsiveness to endogenous estrogen. This response may be excessive in either rate or degree of growth. When the breasts become so large as to be discommoding, tender, and disfiguring, the condition may be referred to as virginal breast hypertrophy. One of the factors contributing to the breast enlargement is generalized mammary interstitial edema. Two forms of therapy have been found useful—diuretics and hormones. Should diuretics alone prove inadequate, then hormonal therapy may be tried. It is felt by some investigators that a dampening action on rapid breast development may be obtained with the use of progesterone or progesterone-like compounds. The administration of ethisterone (10 mg. to 50 mg. per day from day 15 to day 25 of each cycle for several months) may prove beneficial. The striae, in all probability, will become blanched without leaving scars, as arrest or regression in breast development is affected.

DISEASES FROM INGESTION OF RAW LIVER

To the Editor:—*This inquiry concerns the use of raw calf's liver, taken either as such or disintegrated by means of a grinder and blender. The liver is fresh and has not been frozen although it is kept in a refrigerator. There was a time when liver, fried only very lightly, was taken in rather huge amounts by patients with pernicious anemia; apparently no ill-effects were observed. The organs were obtained from supervised slaughter houses. What risk would be incurred if liver was obtained from locally butchered animals? Which, if any, infectious diseases can possibly be transmitted through the ingestion of such liver?*

M.D., New York.

Answer.—In order for a disease to be transmitted by the ingestion of raw calf's liver, it is necessary that viable virulent organisms be present in the liver in adequate numbers. There is little risk if the livers are derived from locally butchered animals obtained from known herds which are free from signs of brucellosis and which have been tuberculin-tested. Lesions of tuberculosis would also be easily detected in infected livers and they would be rejected. In general, the possibility of transmission of an infectious disease under the conditions described is very slight. In addition to infectious disease, the possibility of transmission of parasites, such as flukes, must be considered.

RADIATION AND LUMINOUS PAINT

To the Editor:—*Is there any radiation hazard from the long-time use of bedroom slippers having a luminous-paint patch sewed in the insole?*

Orville S. Walters, M.D., Danville, Ill.

Answer.—Luminous paint is not necessarily radioactive. There are luminous paints available which absorb ambient light during the day and then glow at night. It is impossible to know from the description whether the particular slippers mentioned were painted with a nonradioactive or a radioactive paint. If the paint contained a radioactive material, there is little question that there might well be a radiation hazard from the long-time use of the bedroom slippers. Without measurement, however, it would be impossible to know whether the paint were radioactive or what was the exact amount of radioactivity. Over a period of years close skin contact with a radioactive material might cause damage to the skin and, dependent upon the type of radiation, might or might not cause damage to the underlying structure.

MUSCULAR WEAKNESS AFTER STREPTOCOCCIC INFECTION

To the Editor:—*A 34-year-old woman and her two children were stricken with what was originally thought to be a severe streptococcic pharyngitis. Throat cultures were positive for alpha streptococci. The children made an uneventful recovery with penicillin therapy. The mother, on the other hand, developed a diffuse macular scarlatiniform rash and then a generalized muscular weakness. The rash persisted for approximately six weeks. The muscular weakness responded to neostigmine (Prostigmin) bromide. However, the patient is still running daily temperatures of 99 to 100 F (37.2 to 37.7 C), and she still has some soreness and red streaking of the posterior pharynx. Blood cultures, repeat chest films, and repeat urinalyses have all been normal. The patient has been treated with broad-spectrum antibiotics without improvement. Inasmuch as she is a native of Texas, the possibility of a rickettsial disease has been entertained. Please comment on this case.*

T. M. O'Connor, M.D., San Francisco.

Answer.—The clinical findings and history do not suggest a rickettsial disease, and it is unlikely that either Rocky Mountain spotted fever or typhus is responsible. The course is too prolonged for these rickettsioses or for other milder rickettsial infections which are endemic in the United States. Serologic studies, including the Proteus agglutination and complement-fixation tests, would be helpful. It is not possible to arrive at a definite impression from the data at hand, but, in addition to myasthenia gravis, a connective tissue disorder, including rheumatic fever and a sensitivity reaction to penicillin, should be considered.

PROPHYLAXIS OF AMEBIASIS

To the Editor:—*In a query and minor note in* The Journal *for May 25, 1957, page 505, on "the value of the prophylactic treatment of amebiasis with antiamebic drugs," four consultants advocated the use of Entero-Vioform and similar preparations on what seem to me to be tenuous scientific grounds. Several statements both in the query and in the replies may be misleading. Since 1,500,000 Americans will go abroad this year, more than half to areas where the incidence* *of amebiasis is higher than in the United States, authority should not support chemoprophylactic programs which advocate the mass use of drugs that may not be effective and that may have a potential for medical mischief or danger.*

The cause of the common diarrhea of tourists in Mexico and other countries is not known, but there is considerable reason to believe that the disease is not amebiasis. The diarrhea, as a rule, is brief and self-limited, and several prophylactic and therapeutic regimens which have been employed may deserve credit—at least for not interfering with the natural course of the disease. The evidence that Entero-Vioform is effective, either in prevention or in treatment, is inadequate.

Authority cited by the consultants includes an interesting experience (with Diodoquin) in which none of the volunteers fed cysts of Endamoeba histolytica apparently developed symptoms, whether or not they received the drug; another experiment (with Milibis) involved first 8 and then 14 subjects; and, finally, there was an uncontrolled study in which all the subjects took the drug (Entero-Vioform). On this basis, is it seriously suggested that 500,000 Americans take an arsenical or a drug containing 41% iodine for a month? In a report of the Council on Pharmacy and Chemistry on "Current Status of Therapy in Amebiasis" (J. A. M. A. 160:*1230-1231 [April 7] 1956), the potential dangers of using drugs containing arsenic and iodine in the treatment of the disease are emphasized. This caution is even more applicable in prophylaxis. The manner in which Entero-Vioform is advocated—first in small doses to prevent the disease, then in larger doses to cure it, and, finally, in reduced dosage for continued "prophylaxis"—hardly inspires confidence in its use. The statement, "Entero-Vioform is of special value in treatment of amebiasis and is believed by many laymen outside the United States to be of value also against the bacillary dysenteries," is not documented.*

In the original query the statement is made: "A number of persons return from Mexico with severe amebic dysentery in spite of hygienic precautions. This dysentery frequently proves refractory to treatment with all the modern amebicides." To the best of my knowledge, there are no satisfactory data on the incidence of "severe amebic dysentery" acquired by visitors in Mexico. Inaccurate diagnosis of amebic dysentery is often made in both Mexico and the United States. It is not true that amebic dysentery "frequently proves refractory to treatment with all the modern amebicides." Although some physicians prefer to use a combination of amebicides to produce an exceedingly high rate of primary cure, any one of a dozen currently used amebicides will cure a high percentage of cases.

Most patients with so-called refractory amebiasis either have been given a mistaken diagnosis or represent a group of individuals with a tendency to colitis which has been precipitated or aggravated by a specific infection. On several occasions I have seen patients, reported to have "amebas in the stools," immediately upon completion of a course of therapy that included emetine, tetracycline, an arsenical, and a halogenated quinoline. Unfortunately, even trained parasitologists have been known to confuse macrophages with trophozoites and yeasts with cysts!

A patient planning a visit abroad will often request his physician to suggest the use of a drug. The physician may resist such pressure with confidence, since his patient will undoubtedly succumb to the medical blandishments of friends, lay experts in diarrhea, and enthusiastic advertising. It might be wiser, until it is known what disease is being treated and what is the best treatment, to suggest a simple hygienic program. This may include dietary advice concerning the avoidance of salads and uncooked vegetables, the use of bottled water, a limitation on exposure to exotic foods, and the avoidance of excessive consumption of alcohol. If diarrhea develops, bed rest, the frequent consumption of tea, rice, and applesauce, and the use of simple antidiarrhea measures, such as kaolin with pectin or bismuth preparations and possibly camphorated opium tincture (paregoric), will permit the disease to run its brief course. Upon return home the patient should visit his physician for an examination and for proper study of the stool.

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VARIOUS ROUTES OF IMMUNIZATION

To the Editor:—*In the Aug. 3, 1957, issue of* The Journal, *page 1626, under the heading of "Various Routes of Immunization," the answer to the query states that reactions to tetanus toxoid, either routinely or as a booster dose, are extremely rare. While this has been generally accepted as being true, the widespread use of tetanus toxoid has brought and will continue to bring to notice reactions, some of which have been severe enough to incapacitate for days. In a study now in progress at our laboratories, this has been most noticeable in a National Guard unit. Many members of this unit had had service during World War II and the Korean conflict. Many had had three or four booster doses after primary immunization. Blood samples taken three weeks after injection with a combined diphtheria-tetanus adult product showed in most instances extremely high tetanus antitoxin titers. Out of this group of 57 men, 2 had reactions to the tetanus com-*

ponent severe enough to incapacitate each for a week. With the increased use of combined diphtheria-tetanus immunization, the tendency up until now has been to place the blame for all reactions on the diphtheria component.

We do not believe the statement, "because reactions to the later [tetanus toxoid] are extremely rare," to be true and have some evidence that, when diphtheria and tetanus toxoids are given together, the reactions are correlated with the rise in tetanus antitoxin response and are not correlated with the patient's response immunologically to diphtheria toxoid to the same extent.

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The above comment was referred to the consultant who answered the original query, and his reply follows.—Ed.

To the Editor:—*It is true that the reply stated that reactions to tetanus toxoid are extremely rare, giving the impression that they were of little moment. Actually, the reactions which the consultant had in mind were those of an anaphylactic or allergic type. The latter are indeed rare. They never follow the initial injection and are extremely infrequent after the second injection given usually after a short interval. But they occasionally come on after the third or booster dose, which is given after a much longer interval, the patient having been sensitized allergically by the previous injection or injections. Patients with this type of reaction have urticaria and/or angioedema, with or without symptoms of shock, and the reaction itself may be immediate (in which case it is likely to be severe) or delayed in onset. Reactions of this type are true allergic reactions due to sensitization to the protein in the tetanus toxoid. They should be distinguished from toxic or nonallergic reactions, which can occur in anybody and often occur after the initial injection without previous sensitization. These are believed to be due to irritation from extraneous materials or impurities in the tetanus toxoid. The reactions may be entirely local, with swelling and induration of variable degree and duration, or they may be associated with constitutional symptoms, such as fever, malaise, and chills. Toxic-type reactions appear in a fairly high percentage of patients, especially adults. It is not surprising, therefore, that the correspondent found this to be true in the members of the National Guard unit; in fact, this is corroborated in a recent study by Boynton and associates.* (J. A. M. A. **164**:1874-1879 [Aug. 24] 1957). *The latter reported that these reactions were fairly frequent among college students immunized with combined tetanus-diphtheria toxoid, although none were severe enough to militate against routine use of the toxoid. But it must be emphasized that the reactions which they reported, and which the correspondent apparently also had in mind, were of the toxic kind rather than anaphylactic or allergic reactions which are quite rare, particularly in infants or young children.*

TREATMENT OF MADURA FOOT

To the Editor:—*In the query and minor note on Madura foot in* The Journal *for Aug. 10, 1957, page 1723, the answer to this query was in part at variance with standard texts. It was stated that Madura foot is caused by Nocardia asteroides and that sulfadiazine is therapeutically effective. In reality, although Madura foot is frequently caused by Nocardia, numerous other fungous etiological agents have been reported, including Allescheria, Aspergillus, Penicillium, Madurella, Cephalosporium, Monosporium, Glenospora, and Indiella (Allen, A. C.: The Skin, St. Louis, C. V. Mosby Company, 1954, p. 488). Unlike Nocardia, these are all true fungi (not actinomycetes). As such, they are likely to be resistant to sulfonamides. No certain method of chemotherapy is known for this group. However, it might be worth trying some of the new fungistatics that are still in the experimental stage. Thus, it is essential to determine the etiological agent.*

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The above comment was referred to the consultant who answered the original query, and his reply follows.—Ed.

To the Editor:—*It is unfortunate that we continue to use the nonspecific term Madura foot, and it will be noted that in the first sentence of the original answer, the field was limited by assuming that Nocardia had been proved as the etiological agent. The various other Actinomyces and fungi may cause a similar clincial picture, but in each instance therapy will be governed by identification of the specific organism.*

RECURRENT ABDOMINAL PAIN

To the Editor:—*Concerning the query on recurrent abdominal pain in an 8-year-old boy, which appeared in* The Journal *for Aug. 10, 1957, page 1724, allergy is mentioned as a possible cause by one of the consultants.*

A diagnostic test which I have found helpful in cases of this type would be an injection of 0.2 cc. of epinephrine, 1:1,000. If allergy is the cause, the pain is usually relieved within 15 minutes.

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WASHINGTON NEWS

FROM THE WASHINGTON OFFICE OF THE AMERICAN MEDICAL ASSOCIATION

45,000,000 Under 40 Have Received No Salk Vaccine . .

State Allocation Plan for Asian Influenza Vaccine Dropped . .

Civil Service Commission Promotes Health Insurance Plan . .

45,000,000 UNDER FORTY HAVE RECEIVED NO SALK VACCINE

The Public Health Service, using new statistics gathered by the National Health Survey, has revised its estimate of the number of persons who have received Salk poliomyelitis vaccine.

The new figures show that 5,000,000 persons under 40 have received one injection, in contrast to earlier estimates of 17,000,000, and 25,000,000 have received two shots, instead of 28,000,000. However, they also show an increase in the number who have received the full three shots, from 28,000,000 to 34,000,000.

An estimated 45,000,000 persons under 40 years of age have received no vaccinations.

Commenting on the new data, Surgeon General Burney says:

"It is encouraging to find that the number of persons with maximum protection is greater than had previously been estimated.

"However, the fact that there are still an estimated 45 million—15 million children and 30 million adults under 40—with no protection is a matter of grave concern.

"Since the full course of three injections requires a period of eight months to complete, and since the danger of polio is greatest in the summer months, it is urgent that those with no protection start their shots now.

"The present supply of vaccine is ample and the manufacturers can produce additional vaccine in pace with the need. Unvaccinated persons who become crippled by paralytic polio in the future will suffer a dual tragedy: that of having a disability and knowing that, in all probability, it could have been prevented by the simple and painless precaution of vaccination."

Since last January the American Medical Association has led the nationwide campaign to promote use of the Salk vaccine. The campaign was instigated when manufacturers started reducing output because a surplus was building up. Shortly after the drive got under way the surplus disappeared and local shortages appeared. Now, however, supplies are adequate and manufacturers are prepared to step up their future output in line with demand.

ASIAN INFLUENZA VACCINE ALLOCATION SYSTEM DISCONTINUED

To allow manufacturers to ship more vaccine to high demand areas instead of following a set schedule for each state, the Public Health Service has discontinued the voluntary allocation system for Asian influenza vaccine.

When the action was taken a total of more than 40,000,000 cc. had been released and producers were increasing their output weekly. Reports to PHS indicated that supplies were catching up with demand in some areas, but were inadequate in others.

Under the system, in effect since early September, each state was allocated vaccine from all lots released on the basis of its population.

Surgeon General Burney said that vaccine will be "readily available soon" in all parts of the United States. In some communities supplies are adequate to permit general vaccinations, without regard to priorities.

Dr. Burney again stressed the importance of vaccinating pregnant women and older age groups in which cronic disease is more common and where serious complications occur more frequently.

Even when an epidemic appears to be over in a community, Dr. Burney said, there is a "real possibility" that those who have not had the disease will contract it, and he urged vaccinations for all who are not certain they have had Asian influenza where supplies are adequate.

CIVIL SERVICE COMMISSION PRESSES HEALTH INSURANCE PLAN

In a series of fact sheets going to all federal civilian workers, the Civil Service Commission is explaining its program for health insurance for U. S. employees and their dependents. The objective is to build up solid support among those to be affected before Congress next year takes up the insurance plan, which has been offered in several forms in the past but without success.

The most recent fact sheet includes eight questions and answers, such as the following:

"How much will the government contribute to the cost of my basic health insurance? One-third the cost up to a maximum of $1.50 every two weeks if you enroll for yourself and dependents or 50 cents if you enroll for yourself only. The difference between the total cost of your basic health insurance and the government's contribution will be deducted from your salary.

"How much will the major medical insurance cost? That depends on whether you enroll for yourself only or for yourself and dependents. But either way you will pay a flat rate. If you enroll for yourself and dependents, it will cost you 75 cents every two weeks; if you enroll for yourself only, it will cost you 25 cents. This amount will be deducted from your salary in addition to your share of the basic health insurance cost."

The sheet also includes one table showing variations in cost among the different plans offered by federal employee unions and associations, another showing the cost under Blue Cross–Blue Shield plans in seven different cities, and cost under the Health Insurance Plan of New York City and the Group Health Association of Washington, D. C.

Legislation to put the commission's program into effect was offered last session, but no action was taken by Congress.

SCIENCE FOUNDATION URGES MORE BASIC RESEARCH

The National Science Foundation again is asking for stepped up basic research in science, including medicine. It believes that more money should come from nongovernment sources and that one of the ways to encourage this is to change federal internal revenue laws.

Support for basic research, particularly federal and industrial support, has increased markedly in the past decade, but it is still not enough to keep pace with the nation's requirements, NSF stated. It added:

"The need for more support and more favorable conditions of work is particularly acute in colleges and universities which represent our greatest source of new scientific knowledge and our only source of trained research workers. Since these centers of higher education conduct so large a part of our basic research and train practically all our scientists, their situation is a matter for serious concern."

One solution is proposed—a reduction in the amount of development or applied research work supported by the federal government in universities and colleges. "This should be accompanied by significant increases in the support of basic research in all science departments, including engineering and medicine, and of training for research, through grants, where support from private sources is inadequate to meet the legitimate needs of the institutions."

Other proposals made in the 64-page study:

1. An increase by private industry in its already significant contributions to basic research, especially through more unrestricted funds to universities and other nonprofit institutions, and through the conduct of more basic research in its own laboratories, with prompt publication.

2. Sensitivity on the part of management of private industry to lack of knowledge as a roadblock to its progress, and alertness to opportunities for its scientists—and encouragement to them to pursue the solution of basic problems, wherever this may lead.

3. Encouragement to "industrially oriented" institutes, foundations, professional societies, and other nonprofit organizations in greater support of basic research.

4. Encouragement to state governments, with appropriate federal assistance, to increase the support of basic research and graduate education at state universities.

5. Incentives for industry, other nonfederal organizations and individuals, to increase philanthropic giving for basic research. Such incentives might be provided by changing laws, particularly federal internal revenue laws.

6. Recognition of the requirement that federal grants for research and research training should carry a minimum of restrictions on the freedom of the scientist and the administration of his institution.

7. Development of closer relations and better understanding between members of the Congress and scientists in view of the responsibility of the representatives of all the people to make important decisions involving some understanding of science.

MISCELLANY

During the fiscal year ending last June 30, the federal government spent a total of around 3 billion dollars for scientific research and development of all types, an increase of almost 20% over the previous year's spending in these fields. The estimate is made by the National Science Foundation in one of a series of reports on U. S. research and development activities.

A group of American scientists, including Dr. James S. Robertson, nuclear medicine specialist from the Brookhaven National Laboratory, is on an atoms-for-peace mission to Nicaragua, El Salvador, Guatemala, and Honduras. The men are meeting with scientists, educators, and government officials interested in greater use of atomic energy in agriculture and medicine. The trip first was scheduled for October but had to be postponed.

From July through September the federal government gave the states surplus property for which it paid 67 million dollars. States distribute the real and personal property to educational, public health, and civil defense organizations and institutions.

The National Library of Medicine reports appearance of the second edition of World Medical Periodicals, listing titles of journals in medicine, dentistry, pharmacy, and veterinary medicine that were in publication in 1957, as well as well-known journals that ceased publication after 1900. The publication was prepared by the World Medical Association and the International Union of the Medical Press.

The Federal Trade Commission has advanced a step in its effort to extend its control over health and accident insurance companies. The Supreme Court has agreed to review lower court decisions appealed by the FTC, which held that the agency had no jurisdiction over the companies operating in states that had adequate statutes for supervision of the companies.